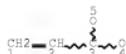


## STRUCTURE SEARCH (Claims 1, 5 &amp; 6)

=&gt; d his 149

(FILE 'HCAPLUS' ENTERED AT 11:08:20 ON 12 JUN 2009)  
L49 4 S L46 AND (L47 OR L48)FILE 'REGISTRY' ENTERED AT 11:16:11 ON 12 JUN 2009  
SAV TEMP L26 FER808REGA/AFILE 'HCAPLUS' ENTERED AT 11:17:16 ON 12 JUN 2009  
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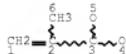
=&gt; d que stat 149

L4 81856 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 80-62-6/CRN  
L5 53869 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 79-41-4/CRN  
L6 52656 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 141-32-2/CRNL8 6751 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L4 AND L5  
AND L6  
L9 STR

## NODE ATTRIBUTES:

CONNECT IS E1 RC AT 5  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 5STEREO ATTRIBUTES: NONE  
L10 STR

## NODE ATTRIBUTES:

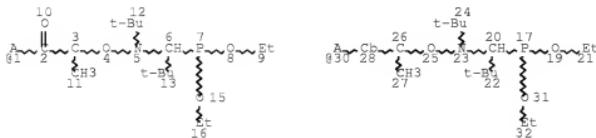
CONNECT IS E1 RC AT 5  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 6

STEREO ATTRIBUTES: NONE

L12 SCR 2043  
L14 114589 SEA FILE=REGISTRY SSS FUL L9 AND L10 AND L12  
L17 2265 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L14(L) BLOCK?  
L24 STR



G1 33

VAR G1=1/30

NODE ATTRIBUTES:

NSPEC IS RC AT 1  
 NSPEC IS RC AT 30  
 DEFAULT MLEVEL IS ATOM  
 GGCAT IS UNS AT 28  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE

L26 63 SEA FILE=REGISTRY SSS FUL L24  
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 L29 7 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L17 AND L28  
 L31 4 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON C13 H29 N O4  
 P/MF  
 L32 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L31 AND  
 ?NITROXIDE?/CNS  
 L36 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON "NITROXIDE,  
 1,1-DIMETHYLETHYL 2-METHYL-1-PHENYLPROPYL"/CN  
 L37 222 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L32  
 L38 104 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L36  
 L39 6 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L29 AND (L37  
 OR L38)  
 L40 88762 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L14  
 L41 6262 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L8  
 L42 88762 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L40 OR L41  
 L43 13 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L42 AND L28  
 L44 9 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L43 AND (L37  
 OR L38)  
 L45 7 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L44 AND  
 BLOCK?  
 L46 7 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L39 OR L45  
 L47 QUE SPE=ON ABB=ON PLU=ON PY=<2004 NOT P/DT  
 L48 QUE SPE=ON ABB=ON PLU=ON (PY=<2004 OR PRY=<2004 OR  
 AY=<2004 OR MY=<2004 OR REVIEW/DT) AND P/DT  
 L49 4 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L46 AND (L47  
 OR L48)

## STRUCTURE SEARCH (Claims 1, 5 &amp; 6)

&gt; d 149 1-4 ibib ed abs hitstr hitind

L49 ANSWER 1 OF 4 HCPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2005:547687 HCPLUS Full-text  
 DOCUMENT NUMBER: 143:80747  
 TITLE: Controlled radical acrylic copolymer  
 thickeners  
 INVENTOR(S): Schmidt, Scott Charles; Callais, Peter  
 Anthony; Macy, Noah Eliot; Guerrett, Olivier  
 PATENT ASSIGNEE(S): Arkema Inc., USA  
 SOURCE: PCT Int. Appl., 40 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005056739	A1	20050623	WO 2004-US34236	2004 1015

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,  
 CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG,  
 ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,  
 KE, KG, KP, KR, KZ, LC, LK, LS, LT, LU, LV, MA, MD,  
 MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL,  
 PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR,  
 TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW  
 RW: BW, GH, GM, KE, LS, MN, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
 ZW, AM, AZ, BY, KG, KS, MD, RU, TJ, TM, AT, BE, BG, CH,  
 CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU,  
 NC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI,  
 CM, GA, GN, GO, GW, ML, MR, NE, SN, TD, TG

CA 2547063	A1	20050623	CA 2004-2547063	2004 1015
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EP 1725637	A1	20061129	EP 2004-820348	2004 1015
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R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LI, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR JP 2007512413	T	20070517	JP 2006-541164	2004 1015
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US 20070082827	A1	20070412	US 2006-578060	2006 0502
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PRIORITY APPLN. INFO.:		US 2003-525549P	P	2003 1126
		WO 2004-US34236	W	2004 1015

ED Entered STN: 24 Jun 2005

AB The present invention relates to acrylic block copolymers synthesized by a controlled radical process, and their use as thickeners in oil-based compns. The acrylic copolymers are especially useful as viscosity index improvers in lubricating oil.

IT 188526-94-5 300811-93-2 300811-94-3

RL: CAT (Catalyst use); USES (Uses)  
(controlled living radical polymerized acrylic copolymer thickeners)

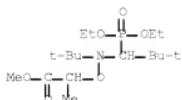
RN 188526-94-5 HCAPLUS

CN Nitroxide, 1-(diethoxyphosphinyl)-2,2-dimethylpropyl 1,1-dimethylethyl (CA INDEX NAME)



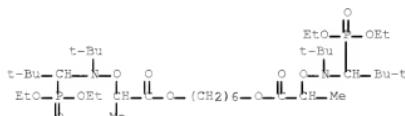
RN 300811-93-2 HCAPLUS

CN 3,7-Dioxa-4-aza-6-phosphanonanoic acid,  
4,5-bis(1,1-dimethylethyl)-6-ethoxy-2-methyl-, methyl ester,  
6-oxide (CA INDEX NAME)



RN 300811-94-3 HCAPLUS

CN 3,7-Dioxa-4-aza-6-phosphanonanoic acid,  
4,5-bis(1,1-dimethylethyl)-6-ethoxy-2-methyl-,  
1,1'-(1,6-hexanediyil) ester, 6,6'-dioxide (CA INDEX NAME)



IT 124331-25-5P 855475-08-0P 855475-09-1P  
855475-10-4P 855475-13-7P 855475-14-8P  
855501-14-3P, Dodecyl methacrylate-methyl acrylate triblock copolymer 855501-19-8P, Dodecyl methacrylate-ethyl acrylate triblock copolymer 855507-83-4P  
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PRP (Properties); PUR (Purification or recovery); PVP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)

## 10550808-296659-EIC SEARCH

(controlled living radical polymerized acrylic copolymer thickeners)

RN 124331-25-5 HCPLUS

CN 2-Propenoic acid, 2-methyl-, dodecyl ester, polymer with ethenylbenzene and 2-ethylhexyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 142-90-5

CMF C16 H30 O2



CM 2

CRN 103-11-7

CMF C11 H20 O2



CM 3

CRN 100-42-5

CMF C8 H8



RN 855475-08-0 HCPLUS

CN 2-Propenoic acid, 2-methyl-, dodecyl ester, polymer with butyl 2-propenoate, triblock (9CI) (CA INDEX NAME)

CM 1

CRN 142-90-5

CMF C16 H30 O2



CM 2

CRN 141-32-2

## 10550808-296659-EIC SEARCH

CMF C7 H12 O2



RN 855475-09-1 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, dodecyl ester, polymer with  
 2-methoxyethyl 2-propenoate, block (9CI) (CA INDEX NAME)

CM 1

CRN 3121-61-7  
 CMF C6 H10 O3



CM 2

CRN 142-90-5  
 CMF C16 H30 O2



RN 855475-10-4 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, dodecyl ester, polymer with ethyl  
 2-propenoate, block (9CI) (CA INDEX NAME)

CM 1

CRN 142-90-5  
 CMF C16 H30 O2



CM 2

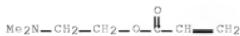
CRN 140-88-5  
 CMF C5 H8 O2



RN 855475-13-7 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, dodecyl ester, polymer with  
 2-(dimethylamino)ethyl 2-propenoate and ethyl 2-propenoate, block  
 (9CI) (CA INDEX NAME)

CM 1

CRN 2439-35-2  
 CMF C7 H13 N O2



CM 2

CRN 142-90-5  
 CMF C16 H30 O2



CM 3

CRN 140-88-5  
 CMF C5 H8 O2



RN 855475-14-8 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, dodecyl ester, polymer with ethyl  
 2-propenoate and  $\alpha$ -(1-oxo-2-propenyl)- $\omega$ -  
 methoxypoly(oxy-1,2-ethanediyl), block (9CI) (CA INDEX NAME)

CM 1

CRN 32171-39-4  
 CMF (C2 H4 O)n C4 H6 O2  
 CCI PMS



## 10550808-296659-EIC SEARCH

CM 2

CRN 142-90-5  
CMF C16 H30 O2

CM 3

CRN 140-88-5  
CMF C5 H8 O2

RN 855501-14-3 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, dodecyl ester, polymer with methyl  
 2-propenoate, triblock (9CI) (CA INDEX NAME)

CM 1

CRN 142-90-5  
CMF C16 H30 O2

CM 2

CRN 96-33-3  
CMF C4 H6 O2

RN 855501-19-8 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, dodecyl ester, polymer with ethyl  
 2-propenoate, triblock (9CI) (CA INDEX NAME)

CM 1

CRN 142-90-5  
CMF C16 H30 O2



CM 2

CRN 140-88-5  
CMF C5 H8 O2

RN 855507-83-4 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, dodecyl ester, polymer with  
 2-methoxyethyl 2-propenoate, triblock (9CI) (CA INDEX NAME)

CM 1

CRN 3121-61-7  
CMF C6 H10 O3

CM 2

CRN 142-90-5  
CMF C16 H30 O2

IT 150344-26-6P 855501-08-5P, Methyl  
 acrylate-dodecyl methacrylate block copolymer, graft  
 RL: PEP (Physical, engineering or chemical process); PRP  
 (Properties); PUR (Purification or recovery); PVP (Physical  
 process); SPN (Synthetic preparation); PREP (Preparation); PROC  
 (Process)  
 (controlled living radical polymerized acrylic copolymer  
 thickeners)

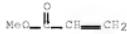
RN 150344-26-6 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, dodecyl ester, polymer with methyl  
 2-propenoate, block (CA INDEX NAME)

CM 1

CRN 142-90-5  
CMF C16 H30 O2



CM 2

CRN 96-33-3  
CMF C4 H6 O2

RN 855501-08-5 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, dodecyl ester, polymer with methyl 2-propenoate, block, graft (9CI) (CA INDEX NAME)

CM 1

CRN 142-90-5  
CMF C16 H30 O2

CM 2

CRN 96-33-3  
CMF C4 H6 O2

IC ICM C10M145-14  
 CC 51-8 (Fossil Fuels, Derivatives, and Related Products)  
 Section cross-reference(s): 35, 36, 66  
 ST controlled living radical polymn acrylic block copolymer  
 thickener; di tri star block copolymer lubricating oil  
 additive viscosifier; acrylic gradient copolymer thickener  
 block solv parameter lubricant micelle

IT Amphiphiles  
 (acrylic block copolymers; controlled living radical  
 polymerized acrylic copolymer thickeners)

IT Polymers, uses  
 RL: MOA (Modifier or additive use); PEP (Physical, engineering or  
 chemical process); PRP (Properties); PUR (Purification or  
 recovery); PVP (Physical process); SPN (Synthetic preparation);  
 PREP (Preparation); PROC (Process); USES (Uses)  
 (block, triblock; controlled living radical polymerized

acrylic copolymer thickeners)

IT Acrylic polymers, uses  
 RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PRP (Properties); PUR (Purification or recovery); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)  
 (block; controlled living radical polymerized acrylic copolymer thickeners)

IT Solubility  
 (solubility parameter, of blocks, defined; controlled living radical polymerized acrylic copolymer thickeners)

IT Polymers, uses  
 RL: MOA (Modifier or additive use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 (star-branched, multi-block; controlled living radical polymerized acrylic copolymer thickeners)

IT Acrylic polymers, uses  
 RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PRP (Properties); PUR (Purification or recovery); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)  
 (styrene-containing, block; controlled living radical polymerized acrylic copolymer thickeners)

IT 188526-94-5 300811-93-2 300811-94-3  
 RL: CAT (Catalyst use); USES (Uses)  
 (controlled living radical polymerized acrylic copolymer thickeners)

IT 9003-77-4P, Poly(2-ethylhexyl acrylate) 25153-46-2P,  
 2-Ethylhexyl acrylate-styrene copolymer 25719-52-2P,  
 Poly(dodecyl methacrylate) 124331-25-5P 745822-11-1P  
 655475-08-0P 855475-09-1P 655475-10-4P  
 655475-11-5P 855475-13-7P 655475-14-8P  
 855501-11-0P, Dodecyl methacrylate-styrene triblock copolymer  
 655501-14-3P, Dodecyl methacrylate-methyl acrylate  
 triblock copolymer 855501-19-3P, Dodecyl  
 methacrylate-ethyl acrylate triblock copolymer  
 655507-83-4P  
 RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PRP (Properties); PUR (Purification or recovery); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)  
 (controlled living radical polymerized acrylic copolymer thickeners)

IT 96-33-3DP, Methyl acrylate, block copolymers containing  
 100-42-5DP, Styrene, block copolymers containing  
 RL: MOA (Modifier or additive use); SPN (Synthetic preparation);  
 PREP (Preparation); USES (Uses)  
 (controlled living radical polymerized acrylic copolymer thickeners)

IT 150344-26-6P 855501-08-5P, Methyl  
 acrylate-dodecyl methacrylate block copolymer, graft  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PUR (Purification or recovery); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)  
 (controlled living radical polymerized acrylic copolymer thickeners)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE  
 FOR THIS RECORD. ALL CITATIONS AVAILABLE  
 IN THE RE FORMAT

L49 ANSWER 2 OF 4 HCPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2003:591230 HCPLUS Full-text  
 DOCUMENT NUMBER: 139:134362  
 TITLE: Method of producing and using materials which  
 are reinforced against impact and which  
 contain block copolymers that are

## 10550808-296659-EIC SEARCH

obtained by means of controlled radical  
polymerization in the presence of nitroxides  
INVENTOR(S): Ruzette, Anne-valerie; Chauvin, Florence;  
Guerret, Olivier; Bertin, Denis; Vuillemin,  
Bruno; Leibler, Ludwik; Gerard, Pierre;  
Ederle, Yannick  
PATENT ASSIGNEE(S): ATOFINA, Fr.  
SOURCE: PCT Int. Appl., 30 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: French  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003062293	A1	20030731	WO 2003-FR186	2003 0121
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RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
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2002	
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JP 2003-562170	A3
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ED Entered STN: 01 Aug 2003

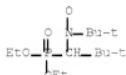
AB The invention relates to the production and use of block copolymers which are obtained by means of controlled radical polymerization in the presence of nitroxides for the purpose of reinforcing brittle polymer matrixes. The invention offers advantages such as (i) simplicity of copolymer synthesis and use and (ii) fine dispersion of the copolymer mols. in the brittle matrix, which ensures both the transparency of the material and high reinforcement against impact. More specifically, the invention relates to the radical synthesis of block copolymers comprising at least three blocks, which include one block having a glass transition temperature of less than 0°C and a thermoplastic end block having a glass transition temperature of more than 0°C, thereby guaranteeing compatibility with the brittle matrix to be reinforced against impact. A typical block copolymer was manufactured by radical polymerization of 3600 g Bu acrylate at 115° in the presence of 59.7073 g CH<sub>2</sub>[(CH<sub>2</sub>)<sub>3</sub>OCOCHMeON(CMe<sub>3</sub>)CH(CMe<sub>3</sub>)P(=O)(OEt)<sub>2</sub>]<sub>2</sub> and 3.1907 g (EtO)<sub>2</sub>P(=O)CH(CMe<sub>3</sub>)N(CMe<sub>3</sub>)<sub>2</sub>O, and polymerization of 6250 g Me methacrylate at 120° in the presence of 1800 g resulting intermediate polymer.

IT 188526-94-5DE, reaction products with Bu acrylate polymers

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (macroinitiator; manufacture of block copolymer impact improvers by controlled radical polymerization in presence of nitroxides and alkoxyamines)

RN 188526-94-5 HCPLUS

CN Nitroxide, 1-(diethoxyphosphinyl)-2,2-dimethylpropyl 1,1-dimethylethyl (CA INDEX NAME)



IT 108501-18-4P, Butyl acrylate-methyl methacrylate-

block copolymer 108501-19-5P, Butyl acrylate-methyl methacrylate-styrene block copolymer

RL: IMF (Industrial manufacture); MOA (Modifier or additive use);

PREP (Preparation); USES (Uses)  
 (manufacture of block copolymer impact improvers by controlled radical polymerization in presence of nitroxides and alkoxyamines)

RN 108501-18-4 HCPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with butyl 2-propenoate, block (CA INDEX NAME)

CM 1

CRN 141-32-2

CMF C7 H12 O2



CM 2

CRN 80-62-6  
CMF C5 H8 O2

RN 108501-19-5 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with butyl  
 2-propenoate and ethenylbenzene, block (CA INDEX NAME)

CM 1

CRN 141-32-2  
CMF C7 H12 O2

CM 2

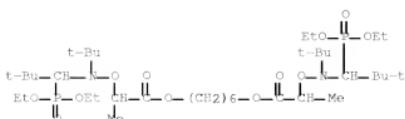
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CM 3

CRN 80-62-6  
CMF C5 H8 O2

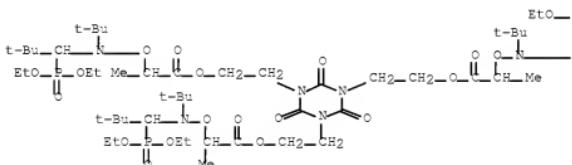
IT 300811-94-3 300811-95-4  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (manufacture of block copolymer impact improvers by  
 controlled radical polymerization in presence of nitroxides and  
 alkoxyamines)

RN 300811-94-3 HCPLUS  
 CN 3,7-Dioxa-4-aza-6-phosphonanoic acid,  
 4,5-bis(1,1-dimethylethyl)-6-ethoxy-2-methyl-,  
 1,1'-(1,6-hexanediyl) ester, 6,6'-dioxide (CA INDEX NAME)



RN 300811-95-4 HCPLUS  
 CN 3,7-Dioxa-4-aza-6-phosphonanoic acid,  
 4,5-bis(1,1-dimethylethyl)-6-ethoxy-2-methyl-,  
 (2,4,6-trioxa-1,3,5-triazine-1,3,5(2H,4H,6H)-triy1)tri-2,1-  
 ethanediyl ester, 6,6',6''-trioxide (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM C08F293-00  
 ICS C08L053-00; C08L101-00  
 CC 37-6 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 35  
 ST Impact improver block copolymer manuf nitroxide  
 controlled; butyl acrylate block copolymer manuf  
 phosphate ester nitroxide controlled; methyl methacrylate  
 block copolymer manuf phosphate ester nitroxide  
 controlled; transparent impact resistant plastic  
 IT Amines, uses  
 RL: NUV (Other use, unclassified); USES (Uses)  
 (alkoxy; manufacture of block copolymer impact improvers  
 by controlled radical polymerization in presence of nitroxides and  
 alkoxyamines)  
 IT Transparent materials

10550808-296659-EIC SEARCH

(impact-resistant; manufacture of block copolymer impact improvers by controlled radical polymerization in presence of nitroxides and alkoxymamines)

IT Epoxy resins, uses  
Fluoropolymers, uses  
Polyamides, uses  
Polycarbonates, uses  
Polyesters, uses  
RL: POF (Polymer in formulation); USES (Uses)  
(manufacture of block copolymer impact improvers by controlled radical polymerization in presence of nitroxides and alkoxymamines)

IT Nitroxides  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(manufacture of block copolymer impact improvers by controlled radical polymerization in presence of nitroxides and alkoxymamines)

IT Impact-resistant materials  
(transparent; manufacture of block copolymer impact improvers by controlled radical polymerization in presence of nitroxides and alkoxymamines)

IT 9003-49-0DP, Polybutyl acrylate, reaction products with diethoxyphosphorynidimethylpropyldimethylethyl nitroxide  
25767-47-9DP, Butyl acrylate-styrene copolymer, reaction products with diethoxyphosphorynidimethylpropyldimethylethyl nitroxide  
188526-94-5DP, reaction products with Bu acrylate polymers  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(macroinitiator; manufacture of block copolymer impact improvers by controlled radical polymerization in presence of nitroxides and alkoxymamines)

IT 108501-18-6P, Butyl acrylate-methyl methacrylate-block copolymer 108501-19-5P, Butyl acrylate-methyl methacrylate-styrene block copolymer  
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)  
(manufacture of block copolymer impact improvers by controlled radical polymerization in presence of nitroxides and alkoxymamines)

IT 300811-94-3 300811-95-4  
RL: NUU (Other use, unclassified); USES (Uses)  
(manufacture of block copolymer impact improvers by controlled radical polymerization in presence of nitroxides and alkoxymamines)

IT 9002-86-2, PVC 9002-88-4, Polyethylene 9003-53-6, Polystyrene 24937-79-9, Polyvinylidene fluoride 25014-41-9,  
Polyacrylonitrile  
RL: POF (Polymer in formulation); USES (Uses)  
(manufacture of block copolymer impact improvers by controlled radical polymerization in presence of nitroxides and alkoxymamines)

IT 9011-14-7, PMMA  
RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)  
(manufacture of block copolymer impact improvers by controlled radical polymerization in presence of nitroxides and alkoxymamines)

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

L49 ANSWER 3 OF 4 HCPLUS COPYRIGHT 2009 ACS on STN  
ACCESSION NUMBER: 2002:647922 HCPLUS Full-text  
DOCUMENT NUMBER: 138:171878  
TITLE: Acrylic coatings produced with controlled  
radical polymerization techniques  
AUTHOR(S): Callais, Peter; Moskal, Michael; Pichai,  
Puvin; Guerret, Olivier; Charleux, Bernadette

## 10550808-296659-EIC SEARCH

CORPORATE SOURCE: ATOFINA Chemicals Organic Peroxides R&D, King of Prussia, PA, 19406, USA  
 SOURCE: Proceedings of the International Waterborne, High-Solids, and Powder Coatings Symposium (2002), 29th, 197-210  
 CODEN: PIWCF4  
 PUBLISHER: University of Southern Mississippi, Dep. of Polymer Science  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 ED Entered STN: 28 Aug 2002  
 AB Free radical polymers. account for more than 50% of the world's polymer production. It is difficult to control these polymers. and synthesize tailored mols. with specific architecture and properties. Several techniques have been researched to develop ways to control free radical polymers. and terms like controlled radical polymerization (CRP) or "living" free radical polymers. have been used to describe the process. The key aspect in CRP is its ability to eliminate the termination of growing free radical chains. This facilitates the synthesis of polymers with low polydispersity, as well as co- and multi-block copolymers. This technol. also allows well-defined polymer modification and grafting. We have developed a family of nitroxide derivs. that can be applied to a wide range of free radical polymers. to perform controlled radical polymer synthesis. This paper will examine the use of two nitroxide compds., namely SG-1 and MONAMS, to synthesize acrylic high solids coating resins with low polydispersity. We will also discuss the production of block copolymers using these nitroxide in a mini-emulsion process. The chemical, synthesis techniques, and properties of these coating resins will be discussed.

IT 355118-27-3P, Butylacrylate-butyl methacrylate block copolymer 731773-80-1P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (diblock; acrylic coatings produced with controlled radical polymerization)  
 RN 355118-27-3 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, butyl ester, polymer with butyl 2-propenoate, block (CA INDEX NAME)

CM 1

CRN 141-32-2  
CMF C7 H12 O2

CM 2

CRN 97-88-1  
CMF C8 H14 O2

RN 731773-80-1 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, butyl ester, polymer with butyl 2-propenoate, diblock (9CI) (CA INDEX NAME)

CM 1

CRN 141-32-2  
CMF C7 H12 O2



CM 2

CRN 97-88-1  
CMF C8 H14 O2

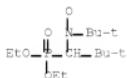


IT 188526-94-5 300811-93-2

RL: CAT (Catalyst use); USES (Uses)  
(polymerization catalyst; acrylic coatings produced with controlled  
radical polymerization)

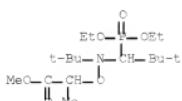
RN 188526-94-5 HCPLUS

CN Nitroxide, 1-(diethoxyphosphinyl)-2,2-dimethylpropyl  
1,1-dimethylethyl (CA INDEX NAME)



RN 300811-93-2 HCPLUS

CN 3,7-Dioxa-4-aza-6-phosphonanoic acid,  
4,5-bis(1,1-dimethylethyl)-6-ethoxy-2-methyl-, methyl ester,  
6-oxide (CA INDEX NAME)



CC 42-7 (Coatings, Inks, and Related Products)

Section cross-reference(s): 35

ST waterborne coating nitroxide mol wt distribution acrylate  
block copolymer; nitroxide control radical polymn acrylic  
coating

IT Polymers, properties

RL: PRP (Properties); SPN (Synthetic preparation); PREP

### (Preparation)

(block; acrylic coatings produced with controlled radical polymerization)

IT 9003-53-6P, Polystyrene 110772-34-4P, Butylacrylate-styrene  
block copolymer

BL: PRP (Properties); SPN (Synthetic preparation); PREP

(Preparation)  
(acrylic coatings produced with controlled radical polymerization)

IT 355118-27-3P, Butylacrylate-butyl methacrylate block copolymer 731773-80-1P

BL: PBR (Properties): SBR (Synthetic preparation); PBRP

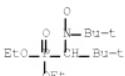
RE: PRE (Properties), SFW (Synthetic preparation), PREP (Preparation)

(diblock; acrylic coatings produced with  
polymerization).

polymerization)  
870-98-4, tert.-Amyl peroctoate 188526-94-5  
300811-93-2  
RL: CAT (Catalyst use); USES (Uses)  
(polymerization catalyst; acrylic coatings produced with controlled  
radical polymerization)

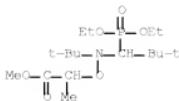
REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 4 OF 4 HCPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2002:624979 HCPLUS Full-text  
 DOCUMENT NUMBER: 137:353473  
 TITLE: Role of nitroxides in the elaboration of new  
 organic materials  
 AUTHOR(S): Chauvin, F.; Gimmes, D.; Marque, S.; Bertin,  
 D.; Tordo, P.; Guerrret, O.  
 CORPORATE SOURCE: UMR 6517 case 521, CNRS, Univ. Aix-marseille,  
 Marseille, 13397, Fr.  
 SOURCE: Polymer Preprints (American Chemical Society,  
 Division of Polymer Chemistry) (2002  
 ), 43(2), 108-109  
 CODEN: ACPPAY; ISSN: 0032-3934  
 PUBLISHER: American Chemical Society, Division of Polymer  
 Chemistry  
 DOCUMENT TYPE: Journal; (computer optical disk)  
 LANGUAGE: English  
 ED Entered STN: 20 Aug 2002  
 AB Nitroxides are one of the most efficient and universal controllers of radical reaction  
 involved in synthesis of organic materials. These stable free radicals allow to  
 increase physico-chemical properties of various polymers from commodity polymers to  
 nanstructured materials. One of the advantages is the capacity of using such mols.  
 during the processing of polymers in extruders. Different nitroxides were used as  
 polymerization catalysts and polymer degradation catalysts.  
 IT 188526-94-5 300811-93-2  
 RL: CAT (Catalyst use); USES (Uses)  
 (nitroxides used as universal controllers of radical reaction  
 including polymerization catalysts and polymer degradation catalysts)  
 RN 188526-94-5 HCPLUS  
 CN Nitroxide, 1-(diethoxyphosphinyl)-2,2-dimethylpropyl  
 1,1-dimethylethyl (CA INDEX NAME)



## 10550808-296659-EIC SEARCH

CN 3,7-Dioxa-4-aza-6-phosphonanoic acid,  
 4,5-bis(1,1-dimethylethyl)-6-ethoxy-2-methyl-, methyl ester,  
 6-oxide (CA INDEX NAME)



IT 108501-18-4P, n-Butyl acrylate-methyl methacrylate  
 block copolymer  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP  
 (Preparation)  
 (nitroxides used as universal controllers of radical reaction  
 including polymerization catalysts and polymer degradation catalysts)  
 RN 108501-18-4 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with butyl  
 2-propenoate, block (CA INDEX NAME)

CM 1

CRN 141-32-2  
 CMF C7 H12 O2



CM 2

CRN 80-62-6  
 CMF C5 H8 O2



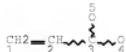
CC 35-8 (Chemistry of Synthetic High Polymers)  
 IT 2564-83-2, TEMPO 188526-94-5 300811-93-2  
 RL: CAT (Catalyst use); USES (Uses)  
 (nitroxides used as universal controllers of radical reaction  
 including polymerization catalysts and polymer degradation catalysts)  
 IT 108501-18-4P, n-Butyl acrylate-methyl methacrylate  
 block copolymer  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP  
 (Preparation)  
 (nitroxides used as universal controllers of radical reaction  
 including polymerization catalysts and polymer degradation catalysts)  
 REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE  
 FOR THIS RECORD. ALL CITATIONS AVAILABLE  
 IN THE RE FORMAT

## STRUCTURE SEARCH (Claims 1 &amp; 5)

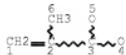
=&gt; d his 152

(FILE 'HCAPLUS' ENTERED AT 11:17:16 ON 12 JUN 2009)  
L52 5 S L51 AND (BLOCK? OR COPOLYM? OR CO(N)POLYM?)

=> d que stat 152  
 L4 81856 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 80-62-6/CRN  
 L5 53869 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 79-41-4/CRN  
 L6 52656 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 141-32-2/CRN  
 L8 6751 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L4 AND L5  
 AND L6  
 L9 STR

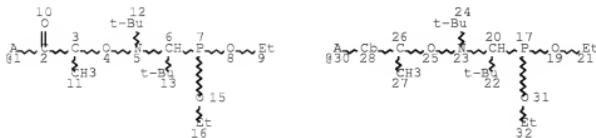


## NODE ATTRIBUTES:

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DEFAULT ECLEVEL IS LIMITEDGRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 5STEREO ATTRIBUTES: NONE  
L10 STR

## NODE ATTRIBUTES:

CONNECT IS E1 RC AT 5  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITEDGRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 6STEREO ATTRIBUTES: NONE  
L12 SCR 2043  
L14 114589 SEA FILE=REGISTRY SSS FUL L9 AND L10 AND L12  
L17 2265 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L14(L)BLOCK?  
L24 STR



G1 33

VAR G1=1/30

NODE ATTRIBUTES:

NSPEC IS RC AT 1  
 NSPEC IS RC AT 30  
 DEFAULT MLEVEL IS ATOM  
 GGCAT IS UNS AT 28  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE

L26 63 SEA FILE=REGISTRY SSS FUL L24  
 L28 70 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L26  
 L29 7 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L17 AND L28  
 L31 4 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON C13 H29 N O4  
 P/MF  
 L32 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L31 AND  
 ?NITROXIDE?/CNS  
 L36 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON "NITROXIDE,  
 1,1-DIMETHYLETHYL 2-METHYL-1-PHENYLPROPYL"/CN  
 L37 222 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L32  
 L38 104 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L36  
 L39 6 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L29 AND (L37  
 OR L38)  
 L40 88762 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L14  
 L41 6262 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L8  
 L42 88762 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L40 OR L41  
 L43 13 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L42 AND L28  
 L44 9 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L43 AND (L37  
 OR L38)  
 L45 7 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L44 AND  
 BLOCK?  
 L46 7 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L39 OR L45  
 L47 QUE SPE=ON ABB=ON PLU=ON PY=<2004 NOT P/DT  
 L48 QUE SPE=ON ABB=ON PLU=ON (PY=<2004 OR PRY=<2004 OR  
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 OR L48)  
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 L52 5 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L51 AND  
 (BLOCK? OR COPOLYM? OR CO(A)POLYM?)

## 10550808-296659-EIC SEARCH

## STRUCTURE SEARCH RESULTS (Claims 1 &amp; 5)

=> d 152 1-5 ibib ed abs hitstr hitind

L52 ANSWER 1 OF 5 HCPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2006:1558238 HCPLUS Full-text  
 DOCUMENT NUMBER: 145:28691  
 TITLE: Cast plates with improved impact resistance  
 based on methyl methacrylate  
 copolymers  
 INVENTOR(S): Guerret, Olivier; Chenard, Jean-Yves; Ederle,  
 Yannick  
 PATENT ASSIGNEE(S): Arkema, Fr.  
 SOURCE: PCT Int. Appl., 57 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: French  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	-----	-----	-----	-----
WO 2006061523	A1	20060615	WO 2005-FR3087	2005 1209
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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
FR 2879205	A1	20060616	FR 2004-13186	2004 1210
<--				
FR 2879205	B1	20070921		2005
CA 2590548	A1	20060615	CA 2005-2590548	1209
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EP 1858939	A1	20071128	EP 2005-825928	2005 1209
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JP 2008523191	T	20080703	JP 2007-544948	2005 1209
<--				
KR 2007088683	A	20070829	KR 2007-713040	2007 0608
<--				
MX 2007006922	A	20070904	MX 2007-6922	

## 10550808-296659-EIC SEARCH

			2007
			0608
		<--	
CN 101115778	A	20080130	CN 2005-80048011
			2007
			0810
		<--	
PRIORITY APPLN. INFO.:		FR 2004-13186	A
			2004
			1210
		<--	
		US 2005-647056P	P
			2005
			0126
		WO 2005-FR3087	W
			2005
			1209

OTHER SOURCE(S): MARPAT 145:28691

ED Entered STIN: 15 Jun 2006

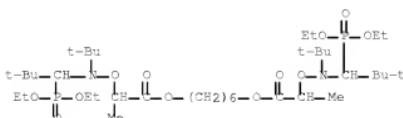
AB Me methacrylate (I) copolymers that provide cast-molded sheets with improved impact strength are manufactured by (1) polymerization of a monomer in the presence of  $\geq 1$  alkoxyamine having  $\geq 2$  groups formed from nitroxides [e.g.,  $[\text{Me}3\text{CCH}[\text{P}(\text{O})(\text{OEt})_2]\text{N}(\text{CMe}_3)\text{OCHMeCO}_2(\text{CH}_3)]_2$ ] at temps. sufficient to activate the alkoxyamine to form a core chain (glass-transition temperature  $<0^\circ$ ), (2) reaction of the core chain optionally, containing unreacted core-chain monomers with monomers destined to form branches (glass-transition temperature  $>0^\circ$ ), and (3) polymerization of I and, optionally, other monomers in the presence of the product of (2) and  $\geq 1$  radical initiator.

IT 300811-94-3

RL: CAT (Catalyst use); USES (Uses)  
(cast plates with improved impact resistance based on Me methacrylate copolymers manufactured in presence of multifunctional alkoxyamines)

RN 300811-94-3 HCPLUS

CN 3,7-Dioxa-4-aza-6-phosphonanoic acid,  
4,5-bis(1,1-dimethylethyl)-6-ethoxy-2-methyl-  
1,1'-(1,6-hexanediyi) ester, 6,6'-dioxide (CA INDEX NAME)



IT 109216-33-3P, Butyl acrylate-methyl methacrylate-styrene graft copolymer

RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)  
(cast plates with improved impact resistance based on Me methacrylate copolymers manufactured in presence of multifunctional alkoxyamines)

RN 109216-33-3 HCPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with butyl 2-propenoate and ethenylbenzene, graft (CA INDEX NAME)

CM 1

CRN 141-32-2  
CMF C7 H12 O2

CM 2

CRN 100-42-5  
CMF C8 H8

CM 3

CRN 80-62-6  
CMF C5 H8 O2

CC 37-3 (Plastics Manufacture and Processing)  
 ST methyl methacrylate copolymer molding impact strength  
 enhancement; multifunctional alkoxyamine initiator unsatd monomer  
 polymn branched methacrylate copolymer; phosphate  
 multifunctional alkoxyamine initiator unsatd monomer polymn  
 branched copolymer  
 IT Amines, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (N-alkoxy; cast plates with improved impact resistance based on  
 Me methacrylate copolymers manufactured in presence of  
 multifunctional alkoxyamines)  
 IT Impact-resistant materials  
 (cast plates with improved impact resistance based on Me  
 methacrylate copolymers manufactured in presence of  
 multifunctional alkoxyamines)  
 IT 300611-94-3  
 RL: CAT (Catalyst use); USES (Uses)  
 (cast plates with improved impact resistance based on Me  
 methacrylate copolymers manufactured in presence of  
 multifunctional alkoxyamines)  
 IT 109216-33-3P, Butyl acrylate-methyl methacrylate-styrene  
 graft copolymer  
 RL: IMF (Industrial manufacture); PRP (Properties); PREP  
 (Preparation)  
 (cast plates with improved impact resistance based on Me  
 methacrylate copolymers manufactured in presence of  
 multifunctional alkoxyamines)  
 IT 25767-47-9P, Butyl acrylate-styrene copolymer  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP  
 (Preparation); RACT (Reactant or reagent)  
 (core chain precursor; cast plates with improved impact

## 10550808-296659-EIC SEARCH

resistance based on Me methacrylate copolymers  
 manufactured in presence of multifunctional alkoxyamines)  
 REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE  
 FOR THIS RECORD. ALL CITATIONS AVAILABLE  
 IN THE RE FORMAT

L52 ANSWER 2 OF 5 HCPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2004:800858 HCPLUS Full-text  
 DOCUMENT NUMBER: 1411:296709  
 TITLE: Manufacture of acrylic films from  
 block copolymers  
 INVENTOR(S): Guerret, Olivier; Gerard, Pierre  
 PATENT ASSIGNEE(S): Atofina, Fr.  
 SOURCE: Fr. Demande, 19 pp.  
 CODEN: FRXXBL  
 DOCUMENT TYPE: Patent  
 LANGUAGE: French  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2852963	A1	20041001	FR 2003-3681	2003 0326
FR 2852961	A1	20041001	FR 2003-11174	2003 0924
FR 2852961	B1	20060707		<--
AU 2004226194	A1	20041014	AU 2004-226194	2004 0323
CA 2520164	A1	20041014	CA 2004-2520164	2004 0323
WO 2004087796	A1	20041014	WO 2004-FR713	2004 0323
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MM, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MN, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 16111190	A1	20060104	EP 2004-742323	2004 0323

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK				<--
CN 1795228	A	20060628	CN 2004-80014705	2004 0323

## 10550808-296659-EIC SEARCH

CN 100462393	C	20090218		
JP 2006521441	T	20060921	JP 2006-505747	
				2004
				0323
			<--	
MX 2005010169	A	20060302	MX 2005-10169	
				2005
				0923
			<--	
IN 2005DN04350	A	20070831	IN 2005-DN4350	
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US 20080050572	A1	20080228	US 2007-550808	
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PRIORITY APPLN. INFO.:			FR 2003-3681	A
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				0326
			<--	
			FR 2003-11174	A
				2003
				0924
			<--	
			WO 2004-FR713	W
				2004
				0323
			<--	

ED Entered STN: 01 Oct 2004

AB Films with thickness 40-300  $\mu\text{m}$ , haze <2%, and breaking elongation >50% are manufactured by extrusion of compns. containing 95-100%  $\geq 1$  (A)nB block copolymers (n  $\geq 2$ ) and 0-5%  $\geq 1$  A' polymer where A and A' = the same or different mostly methacrylic blocks and B = mostly acrylic blocks prepared by polymerization in the presence of alkoxyamines having  $\geq 1$  alkoxyamine group bonded to an organic or mineral radical and having radicals with mol. weight >16 g/mol bonded to the N such as (EtO)<sub>2</sub>P(=O)CHMeN(CMe<sub>3</sub>)OCHMeCO<sub>2</sub>(CH<sub>2</sub>)<sub>6</sub>COCHMeON(CMe<sub>3</sub>)CH(CMe<sub>3</sub>)P(=O)(OEt)<sub>2</sub>. Block B has Tg <0° and represents  $\leq 50\%$  of the copolymer, and block A optionally contains  $\leq 20\%$  units based on acrylic monomers.

IT 762301-15-5

RL: CAT (Catalyst use); USES (Uses)  
(manufacture of transparent ductile acrylic extruded films from block copolymers prepared in presence of alkoxyamine catalysts)

RN 762301-15-5 HCPLUS

CN 3,7-Dioxa-4-aza-6-phosphonanoic acid,  
4,5-bis(1,1-dimethylethyl)-6-ethoxy-2-methyl-, 1,6-hexanediy<sub>1</sub> ester (9CI) (CA INDEX NAME)



IT 135028-55-6P, Butyl acrylate-methacrylic acid-methyl methacrylate block copolymer

RL: IMF (Industrial manufacture); PREP (Preparation)  
(manufacture of transparent ductile acrylic extruded films from block copolymers prepared in presence of

alkoxyamine catalysts)  
 RN 135028-55-6 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, polymer with butyl 2-propenoate and  
 methyl 2-methyl-2-propenoate, block (9CI) (CA INDEX NAME)

CM 1

CRN 141-32-2  
 CMF C7 H12 O2



CM 2

CRN 80-62-6  
 CMF C5 H8 O2



CM 3

CRN 79-41-4  
 CMF C4 H6 O2



IC ICM C08L033-06  
 ICS C08J005-18; B32B027-30  
 CC 37-3 (Plastics Manufacture and Processing)  
 ST transparent ductile acrylic block copolymer  
 extruded film; phosphonate ester alkoxyamine initiator acrylic  
 methacrylic copolymer manuf; alkoxyamine initiator  
 acrylic methacrylic copolymer manuf transparent film  
 IT Polycarbonates, miscellaneous  
 RL: MSC (Miscellaneous)  
 (coating substrate; manufacture of transparent ductile acrylic  
 extruded films from block copolymers prepared  
 in presence of alkoxyamine catalysts for coatings)  
 IT Coating materials  
 (manufacture of transparent ductile acrylic extruded films from  
 block copolymers prepared in presence of  
 alkoxyamine catalysts for coatings)  
 IT Laminated plastics, miscellaneous  
 RL: MSC (Miscellaneous)  
 (manufacture of transparent ductile acrylic extruded films from  
 block copolymers prepared in presence of  
 alkoxyamine catalysts for laminates)  
 IT 9002-86-2, PVC 9003-07-0, Polypropylene 9003-53-6, Polystyrene  
 9003-56-9, ABS polymer

## 10550808-296659-EIC SEARCH

RL: MSC (Miscellaneous)

(coating substrate); manufacture of transparent ductile acrylic extruded films from block copolymers prepared in presence of alkoxymine catalysts for coatings)

IT 762301-15-5

RL: CAT (Catalyst use); USES (Uses)

(manufacture of transparent ductile acrylic extruded films from block copolymers prepared in presence of alkoxymine catalysts)

IT 135028-55-6P, Butyl acrylate-methacrylic acid-methyl methacrylate block copolymer

RL: IMF (Industrial manufacture); PREP (Preparation)

(manufacture of transparent ductile acrylic extruded films from block copolymers prepared in presence of alkoxymine catalysts)

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 3 OF 5 HCPLUS COPYRIGHT 2009 ACS on STN  
ACCESSION NUMBER: 2004:492328 HCPLUS Full-text

DOCUMENT NUMBER: 141138999

TITLE: Gradient copolymers that are as soluble or at least as dispersible in water as in organic solvents

INVENTOR(S): Guerret, Olivier

PATENT ASSIGNEE(S): Atofina, Fr.

SOURCE: Fr. Demande, 24 pp.

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2848557	A1	20040618	FR 2002-15852	2002 1213
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FR 2848557	B1	20060707		
CA 2509828	A1	20040701	CA 2003-2509828	2003 1211
				<--
WO 2004055071	A1	20040701	WO 2003-FR3669	2003 1211
				<--

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RW: GH, GM, KE, LS, MN, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2003296815 A1 20040709 AU 2003-296815

2003  
1211

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EP 1583781 A1 20051012 EP 2003-813161

2003  
1211

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EP 1583781 B1 20080702  
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 MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ,  
 EE, HU, SK

CN 1738841 A 20060222 CN 2003-80108848

2003  
1211

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CN 100366649 C 20080206  
 JP 2006509882 T 20060323 JP 2004-560552

2003  
1211

&lt;--

AT 399804 T 20080715 AT 2003-813161

2003  
1211

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IN 2005DN02539 A 20090320 IN 2005-DN2539

2005  
0610

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MX 2005006309 A 20060208 MX 2005-6309

2005  
0613

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US 20060058467 A1 20060316 US 2005-538730

2005  
0613

&lt;--

PRIORITY APPLN. INFO.: FR 2002-15852 A

2002  
1213

&lt;--

WO 2003-FR3669 W

2003  
1211

&lt;--

OTHER SOURCE(S): MARPAT 141:38999

ED Entered STN: 18 Jun 2004

AB Amphiphilic gradient copolymers with the title property, useful in paints, adhesives, and cosmetics, comprise at least units of a monomer (M1) that forms homopolymers with glass-transition temps. ( $T_g$ )  $<20^\circ$  and of a monomer (M2) that forms homopolymers with  $T_g >20^\circ$ , with the latter monomer being  $>50\%$  of the copolymer,  $21$  of the monomers being hydrophilic and being  $\geq 5\%$  of the copolymer, so that the gradient chain structure (G) is governed by the relation  $G(x) = \sum [M_i(x)]$ , where  $x$  is the normalized position on the polymer chain and  $[M_i(x)]$  is the concentration relative to this position of the monomer  $M_i$  (expressed in mol). These polymers are manufactured by radical polyrn at  $10-160^\circ$  in the presence of an initiator and  $R'RLCHNRO$  [R', R = C1-40 alkyl (optionally substituted by OH, alkoxy, or amino), or may bond together to form a ring, RL = group having mol. weight  $>16$  such as  $(R''O)(R''')O)P(:O)$ , R'', R''' = C1-40 alkyl (optionally substituted by OH, alkoxy, or amino), or may bond together to form a ring] (I) as mediators or in the presence of a combination of I and  $[R'RLCHNRO]_nZ$  (R', RL, R = same as in I, Z = mono- or multivalent radical bearing styryl-, acryl-, or methacryl-type groups, n  $\leq 8$ ). A typical polymer was manufactured by heating  $(Eto)_2P(:O)C(Me_3)N(Me_3)OCHMeOCOMe$  3,  $(Eto)_2P(:O)C(Me_3)N(Me_3)O$  0.18, Et acrylate 480, styrene 60, and methacrylic acid 60 g 198 min at  $110-115^\circ$ .

IT 702659-10-7P 702659-11-8P

RL: IMF (Industrial manufacture); PREP (Preparation)  
 (gel; manufacture of water-dispersible or -soluble amphiphilic gradient copolymers in presence of catalyst-amine oxide or alkoxyamine-amine oxide mixts.)

RN 702659-10-7 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, polymer with ethenylbenzene and

## 10550808-296659-EIC SEARCH

methyl 2-propenoate, compd. with 1,2-propanediamine (9CI) (CA INDEX NAME)

CM 1

CRN 78-90-0  
CMF C3 H10 N2



CM 2

CRN 29407-83-8  
CMF (C8 H8 . C4 H6 O2 . C4 H6 O2)x  
CCI PMS

CM 3

CRN 100-42-5  
CMF C8 H8



CM 4

CRN 96-33-3  
CMF C4 H6 O2



CM 5

CRN 79-41-4  
CMF C4 H6 O2



RN 702659-11-8 HCPLUS  
CN 2-Propenoic acid, 2-methyl-, polymer with ethenylbenzene and methyl 2-propenoate, compd. with 2-[bis(1-methylethyl)amino]ethanol and 1,2-propanediamine (9CI) (CA INDEX NAME)

## 10550808-296659-EIC SEARCH

CM 1

CRN 96-80-0  
CMF C8 H19 N O

CM 2

CRN 78-90-0  
CMF C3 H10 N2

CM 3

CRN 29407-83-8  
CMF (C8 H8 . C4 H6 O2 . C4 H6 O2)x  
CCI PMS

CM 4

CRN 100-42-5  
CMF C8 H8

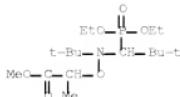
CM 5

CRN 96-33-3  
CMF C4 H6 O2

CM 6

CRN 79-41-4  
CMF C4 H6 O2

IT 300811-93-2  
 RL: CAT (Catalyst use); USES (Uses)  
 (manufacture of water-dispersible or -soluble amphiphilic gradient  
 copolymers in presence of catalyst-amine oxide or  
 alkoxymine-amine oxide mixts.)  
 RN 300811-93-2 HCPLUS  
 CN 3,7-Dioxa-4-aza-6-phosphanonanoic acid,  
 4,5-bis(1,1-dimethylethyl)-6-ethoxy-2-methyl-, methyl ester,  
 6-oxide (CA INDEX NAME)



IT 25035-68-1P, Ethyl acrylate-methacrylic acid-styrene  
 copolymer 25036-16-2P, Butyl  
 acrylate-methacrylic acid-styrene copolymer  
 29407-83-8P, Methacrylic acid-methyl acrylate-styrene  
 copolymer 30970-31-1P, Ethyl  
 acrylate-methacrylic acid-methyl acrylate-styrene  
 copolymer 31671-56-4P, Butyl acrylate-ethyl  
 acrylate-methacrylic acid-styrene copolymer  
 RL: CPS (Chemical process); IMP (Industrial manufacture); PEP  
 (Physical, engineering or chemical process); PREP (Preparation);  
 PROC (Process)  
 (manufacture of water-dispersible or -soluble amphiphilic gradient  
 copolymers in presence of catalyst-amine oxide or  
 alkoxymine-amine oxide mixts.)  
 RN 25035-68-1 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, polymer with ethenylbenzene and ethyl  
 2-propenoate (CA INDEX NAME)

CM 1

CRN 140-88-5  
 CMF C5 H8 O2

CM 2

CRN 100-42-5  
 CMF C8 H8

CM 3

CRN 79-41-4  
CMF C4 H6 O2RN 25036-16-2 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, polymer with butyl 2-propenoate and  
ethenylbenzene (CA INDEX NAME)

CM 1

CRN 141-32-2  
CMF C7 H12 O2

CM 2

CRN 100-42-5  
CMF C8 H8

CM 3

CRN 79-41-4  
CMF C4 H6 O2RN 29407-83-8 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, polymer with ethenylbenzene and  
methyl 2-propenoate (CA INDEX NAME)

CM 1

CRN 100-42-5  
CMF C8 H8

## 10550808-296659-EIC SEARCH



CM 2

CRN 96-33-3  
CMF C4 H6 O2

CM 3

CRN 79-41-4  
CMF C4 H6 O2

RN 30970-31-1 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, polymer with ethenylbenzene, ethyl 2-propenoate, and methyl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 140-88-5  
CMF C5 H8 O2

CM 2

CRN 100-42-5  
CMF C8 H8

CM 3

CRN 96-33-3  
CMF C4 H6 O2



CM 4

CRN 79-41-4  
CMF C4 H6 O2RN 31671-56-4 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, polymer with butyl 2-propenoate, ethenylbenzene and ethyl 2-propenoate (CA INDEX NAME)

CM 1

CRN 141-32-2  
CMF C7 H12 O2

CM 2

CRN 140-88-5  
CMF C5 H8 O2

CM 3

CRN 100-42-5  
CMF C8 H8

CM 4

CRN 79-41-4

CMF C4 H6 O2



IT 702659-07-2P, Butyl acrylate-methacrylic acid-styrene copolymer salt with 2-amino-2-methylpropanol  
702659-09-4P

RL: IMF (Industrial manufacture); PREP (Preparation)  
(manufacture of water-dispersible or -soluble amphiphilic gradient copolymers in presence of catalyst-amine oxide or alkoxymine-amine oxide mixts.)

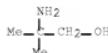
RN 702659-07-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, polymer with butyl 2-propenoate and ethenylbenzene, compd. with 2-amino-2-methyl-1-propanol (9CI) (CA INDEX NAME)

CM 1

CRN 124-68-5

CMF C4 H11 N O



CM 2

CRN 25036-16-2

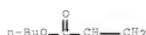
CMF (C8 H8 . C7 H12 O2 . C4 H6 O2)x

CCI PMS

CM 3

CRN 141-32-2

CMF C7 H12 O2



CM 4

CRN 100-42-5

CMF C8 H8



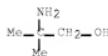
## 10550808-296659-EIC SEARCH

CM 5

CRN 79-41-4  
CMF C4 H6 O2

RN 702659-09-4 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, polymer with ethenylbenzene and ethyl 2-propenoate, compd. with 2-amino-2-methyl-1-propanol (CA INDEX NAME)

CM 1

CRN 124-68-5  
CMF C4 H11 N O

CM 2

CRN 25035-68-1  
CMF (C8 H8 . C5 H8 O2 . C4 H6 O2)x  
CCI PMS

CM 3

CRN 140-88-5  
CMF C5 H8 O2

CM 4

CRN 100-42-5  
CMF C8 H8

CM 5

CRN 79-41-4  
CMF C4 H6 O2



IC ICM C08F220-12  
ICS C08F293-00; C08F002-38; C09J133-06; C09D133-06; A61K007-00;  
C08F236-04; C08F220-06

CC 35-4 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 38, 42, 62

ST gradient copolymer water thinnable paint adhesive  
cosmetic; butyl acrylate styrene methacrylic acid gradient polymer  
manuf; nitroxide mediator gradient acrylic polymer manuf;  
alkoxyamine initiator gradient acrylic polymer manuf

IT Amphiphiles  
Hydrogels  
(manufacture of water-dispersible or -soluble amphiphilic gradient  
copolymers in presence of catalyst-amine oxide or  
alkoxyamine-amine oxide mixts.)

IT Amine oxides  
RL: NNU (Other use, unclassified); USES (Uses)  
(manufacture of water-dispersible or -soluble amphiphilic gradient  
copolymers in presence of catalyst-amine oxide or  
alkoxyamine-amine oxide mixts.)

IT Paints  
(manufacture of water-dispersible or -soluble amphiphilic gradient  
copolymers in presence of catalyst-amine oxide or  
alkoxyamine-amine oxide mixts. for paints)

IT Adhesives  
(manufacture of water-dispersible or -soluble amphiphilic gradient  
copolymers in presence of catalyst-amine oxide or  
alkoxyamine-amine oxide mixts. for paints for adhesives)

IT Cosmetics  
(manufacture of water-dispersible or -soluble amphiphilic gradient  
copolymers in presence of catalyst-amine oxide or  
alkoxyamine-amine oxide mixts. for paints for cosmetics)

IT Polymerization  
Polymerization catalysts  
(radical; manufacture of water-dispersible or -soluble amphiphilic  
gradient copolymers in presence of catalyst-amine  
oxide or alkoxyamine-amine oxide mixts.)

IT 702659-10-7P 702659-11-8P  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(gel; manufacture of water-dispersible or -soluble amphiphilic gradient  
copolymers in presence of catalyst-amine oxide or  
alkoxyamine-amine oxide mixts.)

IT 300811-93-2  
RL: CAF (Catalyst use); USES (Uses)  
(manufacture of water-dispersible or -soluble amphiphilic gradient  
copolymers in presence of catalyst-amine oxide or  
alkoxyamine-amine oxide mixts.)

IT 25035-68-1P, Ethyl acrylate-methacrylic acid-styrene  
copolymer 25036-16-2P, Butyl  
acrylate-methacrylic acid-styrene copolymer  
29407-83-8P, Methacrylic acid-methyl acrylate-styrene  
copolymer 30970-31-1P, Ethyl  
acrylate-methacrylic acid-methyl acrylate-styrene  
copolymer 31671-56-4P, Butyl acrylate-ethyl  
acrylate-methacrylic acid-styrene copolymer  
RL: CPS (Chemical process); IMF (Industrial manufacture); PREP  
(Physical, engineering or chemical process); PEP (Preparation);

## PROC (Process)

(manufacture of water-dispersible or -soluble amphiphilic gradient copolymers in presence of catalyst-amine oxide or alkoxymine-amine oxide mixts.)

IT 702659-07-2P, Butyl acrylate-methacrylic acid-styrene copolymer salt with 2-amino-2-methylpropanol  
702659-09-4P

## RL: IMF (Industrial manufacture); PREP (Preparation)

(manufacture of water-dispersible or -soluble amphiphilic gradient copolymers in presence of catalyst-amine oxide or alkoxymine-amine oxide mixts.)

IT 188526-94-5

## RL: NUV (Other use, unclassified); USES (Uses)

(manufacture of water-dispersible or -soluble amphiphilic gradient copolymers in presence of catalyst-amine oxide or alkoxymine-amine oxide mixts.)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

L52 ANSWER 4 OF 5 HCPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2004:120516 HCPLUS Full-text

DOCUMENT NUMBER: 140:164357

TITLE: Alkoxymamines from  $\beta$ -phosphorated nitroxides and their use in radical polymerization

INVENTOR(S): Couturier, Jean Luc; Guerret, Olivier; Bertin, Denis

PATENT ASSIGNEE(S): Atofina, Fr.

SOURCE: Fr. Demande, 30 pp.

CODEN: FRXXBL

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

## PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2843393	A1	20040213	FR 2002-10030	
				2002 0807
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FR 2843393	B1	20051230		
FR 2843394	A1	20040213	FR 2003-3169	
				2003 0502
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FR 2843394	B1	20051230		
CA 2494826	A1	20040219	CA 2003-2494826	
				2003 0723
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WO 2004014926	A2	20040219	WO 2003-FR2328	
				2003 0723
			<--	

WO 2004014926 A3 20040408  
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA,  
CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI,  
GB, GD, GE, GH, GM, HE, HU, ID, IL, IN, IS, JP, KE, KG,  
KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK,  
MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU,  
SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,  
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW  
RN: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM,

**10550808-296659-EIC SEARCH**

AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GO, GW, ML, MR, NE, SN, TD, TG	AU 2003271824	A1 20040225	AU 2003-271824	2003 0723
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EP 1527079	A2 20050504	EP 2003-753662	2003 0723	
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CN 1688592	A 20051026	CN 2003-822926	2003 0723	
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CN 100422195	C 20081001			
JP 2005534712	T 20051117	JP 2004-526948	2003 0723	
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JP 4203820	B2 20090107			
AT 348833	T 20070115	AT 2003-753662	2003 0723	
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ES 2279146	T3 20070816	ES 2003-753662	2003 0723	
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MX 2005001530	A 20050505	MX 2005-1530	2005 0207	
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KR 851795	B1 20080813	KR 2005-702339	2005 0207	
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IN 2005DN00502	A 20090227	IN 2005-DN502	2005 0209	
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US 20060142511	A1 20060629	US 2006-523481	2006 0131	
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IN 2007DN07005	A 20070928	IN 2007-DN7005	2007 0910	
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JP 2009024018	A 20090205	JP 2008-210213	2008 0819	
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PRIORITY APPLN. INFO.:		FR 2002-10030	A	2002 0807
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		FR 2003-3169	A	2003 0502
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		JP 2004-526948	A3	

	2003
	0723
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WO 2003-FR2328	W
	2003
	0723
<--	
IN 2005-DN502	A3
	2005
	0209

OTHER SOURCE(S): MARPAT 140:164357

ED Entered STN: 13 Feb 2004

AB R20COCR20N(CMe3)CH[P(O(OEt)2)2]CMe2CHR1(R = Cl-3 alkyl, R1 = H or OCOR3, R3 = Cl-20 alkyl, R2 = H, Cl-8 alkyl, Ph, Li, Na, K, H4N, BuN, or Bu3HN, with the exclusion of R1 = H and R2 = Cl-6 alkyl) are useful as initiators for radical polymerization of acrylates with high propagation rate consts. while decreasing the risk of out-of-control reaction in the manufacture of high mol. weight polymers.

IT 288583-07-3P 654636-63-2P

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
(alkoxyamines from  $\beta$ -phosphorated nitroxides for catalysts in radical polymerization of acrylates)

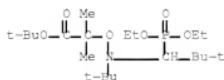
RN 288583-07-3 HCPLUS

CN 3,7-Dioxa-4-aza-6-phosphanonanoic acid,  
4,5-bis(1,1-dimethylethyl)-6-ethoxy-2,2-dimethyl-, methyl ester,  
6-oxide (CA INDEX NAME)



RN 654636-63-2 HCPLUS

CN 3,7-Dioxa-4-aza-6-phosphanonanoic acid,  
4,5-bis(1,1-dimethylethyl)-6-ethoxy-2,2-dimethyl-,  
1,1-dimethylethyl ester, 6-oxide (CA INDEX NAME)



IT 25852-37-2P, Butyl acrylate-methyl methacrylate copolymer

RL: IMF (Industrial manufacture); PREP (Preparation)  
(alkoxyamines from  $\beta$ -phosphorated nitroxides for catalysts in radical polymerization of acrylates)

RN 25852-37-3 HCPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with butyl 2-propenoate (CA INDEX NAME)

CM 1

CRN 141-32-2

CMF C7 H12 O2



CM 2

CRN 80-62-6  
CMF C5 H8 O2

IC ICM C07F009-40  
 ICS C08F002-38; C08F004-32; C08F120-18; C08F220-14; C08F220-18  
 CC 35-3 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 23  
 IT 288583-07-3P 654636-62-1P 654636-63-2P  
 654636-64-3P  
 RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)  
 (alkoxyamines from  $\beta$ -phosphorated nitroxides for catalysts  
 in radical polymerization of acrylates)  
 IT 9003-49-0P, Poly(butyl acrylate) 9011-14-7P, PMMA  
 25852-37-3P, Butyl acrylate-methyl methacrylate  
 copolymer  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (alkoxyamines from  $\beta$ -phosphorated nitroxides for catalysts  
 in radical polymerization of acrylates)  
 REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE  
 FOR THIS RECORD. ALL CITATIONS AVAILABLE  
 IN THE RE FORMAT

L52 ANSWER 5 OF 5 HCPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2003:610100 HCPLUS Full-text  
 DOCUMENT NUMBER: 139:151190  
 TITLE: Preparation of resins for high-solids coatings  
 via controlled radical polymerization  
 INVENTOR(S): Callais, Peter A.; Pichai, Puvin; Moskal,  
 Michael G.; Guerret, Olivier  
 PATENT ASSIGNEE(S): Atofina Chemicals, Inc., USA  
 SOURCE: U.S. Pat. Appl. Publ., 10 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20030149205	A1	20030807	US 2002-61423	2002 0201
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US 6762263	B2	20040713		
AU 2002301897	A1	20030821	AU 2002-301897	

## 10550808-296659-EIC SEARCH

				2002
				1031
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AU 2002301897	B2	20071101	CA 2002-2412191	
CA 2412191	A1	20030801		2002
				1119
			<--	
MX 2002011685	A	20030808	MX 2002-11685	
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				1126
			<--	
EP 1342735	A2	20030910	EP 2003-290146	
				2003
				0121
			<--	
EP 1342735	A3	20031217		
EP 1342735	B1	20061220		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
AT 348846	T	20070115	AT 2003-290146	
				2003
				0121
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ES 2279073	T3	20070816	ES 2003-290146	
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				0121
			<--	
JP 2004002678	A	20040108	JP 2003-20074	
				2003
				0129
			<--	
PRIORITY APPLN. INFO.:			US 2002-61423	A
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				0201
			<--	

OTHER SOURCE(S): MARPAT 139:151190

ED Entered STN: 08 Aug 2003

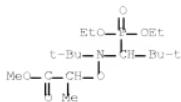
AB Polymers with solids content and viscosity suitable for use in low volatile organic solvent coating compns. are prepared by controlled radical solution polymerization of monomers comprising substituted or unsubstituted acrylic acid, or esters thereof in a solvent suitable for high solids coating application at a monomer concentration sufficient to give the desired polymer concentration by treating the monomers in the solvent with a controlled radical initiator selected from N,N-dialkyl-alkoxyamines having one hydrogen atom on one carbon atom in the a position of one alkyl group attached to the amino nitrogen, nitroxyl radicals having one hydrogen atom on one carbon atom in the a position of one alkyl group attached to the nitroxyl nitrogen and mixts. thereof. A Bu acrylate-2-hydroxyethyl acrylate-styrene copolymer was prepared using Me 2-[N-tert-butyl-N-(1-diethylphosphono-2,2- dimethylpropyl)-N-oxy]propionate initiator.

IT 300811-93-2

RL: CAT (Catalyst use); USES (Uses)  
(preparation of resins for high-solids coatings via controlled radical polymerization)

RN 300811-93-2 HCPLUS

CN 3,7-Dioxa-4-aza-6-phosphonanoic acid,  
4,5-bis(1,1-dimethylethyl)-6-ethoxy-2-methyl-, methyl ester,  
6-oxide (CA INDEX NAME)



IT 94798-18-2P, Butyl acrylate-butyl  
methacrylate-2-hydroxyethyl acrylate-styrene copolymer  
RL: IMF (Industrial manufacture); PRP (Properties); PREP  
(Preparation)  
(preparation of resins for high-solids coatings via controlled  
radical polymerization)

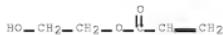
RN 94798-18-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, butyl ester, polymer with butyl  
2-propenoate, ethenylbenzene and 2-hydroxyethyl 2-propenoate (9CI)  
(CA INDEX NAME)

CM 1

CRN 818-61-1

CMF C5 H8 O3



CM 2

CRN 141-32-2

CMF C7 H12 O2



CM 3

CRN 100-42-5

CMF C8 H8



CM 4

CRN 97-88-1

CMF C8 H14 O2



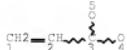
IC ICM C08F002-00  
INC1 526220000; 526319000; 526317100; 526346000; 526330000  
CC 42-10 (Coatings, Inks, and Related Products)  
IT 224575-62-6 288583-05-1 300811-93-2 462104-38-7  
RL: CAT (Catalyst use); USES (Uses)  
(preparation of resins for high-solids coatings via controlled  
radical polymerization)  
IT 25067-83-8P, Acrylic acid-butyl acrylate-2-hydroxyethyl  
acrylate-styrene copolymer 26587-25-7P, Butyl  
acrylate-2-hydroxyethyl acrylate-styrene copolymer  
94798-18-2P, Butyl acrylate-butyl  
methacrylate-2-hydroxyethyl acrylate-styrene copolymer  
572925-38-3P  
RL: IMP (Industrial manufacture); PRP (Properties); PREP  
(Preparation)  
(preparation of resins for high-solids coatings via controlled  
radical polymerization)  
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

## STRUCTURE SEARCH (Claims 1 &amp; 6)

=> d his 157

(FILE 'HCAPLUS' ENTERED AT 11:17:16 ON 12 JUN 2009)  
 L57 8 S L56 NOT (L49 OR L52)

=> d que stat 157  
 L4 81856 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 80-62-6/CRN  
 L5 53869 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 79-41-4/CRN  
 L6 52656 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 141-32-2/CRN  
 L8 6751 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L4 AND L5  
 AND L6  
 L9 STR

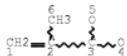


## NODE ATTRIBUTES:

CONNECT IS E1 RC AT 5  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 5

STEREO ATTRIBUTES: NONE  
 L10 STR

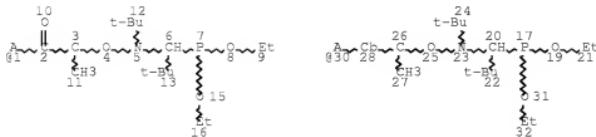


## NODE ATTRIBUTES:

CONNECT IS E1 RC AT 5  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 6

STEREO ATTRIBUTES: NONE  
 L12 SCR 2043  
 L14 114589 SEA FILE=REGISTRY SSS FUL L9 AND L10 AND L12  
 L17 2265 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L14(L)BLOCK?  
 L24 STR



G1 33

VAR G1=1/30  
 NODE ATTRIBUTES:  
 NSPEC IS RC AT 1  
 NSPEC IS RC AT 30  
 DEFAULT MLEVEL IS ATOM  
 GGCAT IS UNS AT 28  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE

L26 63 SEA FILE=REGISTRY SSS FUL L24  
 L28 70 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L26  
 L29 7 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L17 AND L28  
 L31 4 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON C13 H29 N O4  
 P/MF  
 L32 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON L31 AND  
 ?NITROXIDE?/CNS  
 L36 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON "NITROXIDE,  
 1,1-DIMETHYLETHYL 2-METHYL-1-PHENYLPROPYL"/CN  
 L37 222 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L32  
 L38 104 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L36  
 L39 6 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L29 AND (L37  
 OR L38)  
 L40 88762 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L14  
 L41 6262 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L8  
 L42 88762 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L40 OR L41  
 L43 13 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L42 AND L28  
 L44 9 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L43 AND (L37  
 OR L38)  
 L45 7 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L44 AND  
 BLOCK?  
 L46 7 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L39 OR L45  
 L47 QUE SPE=ON ABB=ON PLU=ON PY=<2004 NOT P/DT  
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 AY=<2004 OR MY=<2004 OR REVIEW/DT) AND P/DT  
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 L53 29 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L42 AND (L37  
 OR L38)  
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 (BLOCK? OR COPOLYM? OR CO(A)POLYM?)  
 L55 29 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L54 AND  
 ?ACRYL?

10550808-296659-EIC SEARCH

L56                   14 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L55 AND (L47  
OR L48)  
L57                   8 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L56 NOT (L49  
OR L52)

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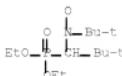
L57 ANSWER 1 OF 8 HCPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2006:634432 HCPLUS Full-text  
 DOCUMENT NUMBER: 1455:83820  
 TITLE: Use of copolymers with a composition  
 gradient as sole stabilizer in emulsion  
 free-radical polymerization  
 INVENTOR(S): Magnet, Stephanie; Guerrret, Olivier; Lefay,  
 Catherine; Charleux, Bernadette  
 PATENT ASSIGNEE(S): Arkema, Fr.  
 SOURCE: PCT Int. Appl., 25 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2006066971	A1	20060629	WO 2005-EP14169	2005 1222
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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GH, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
FR 2880024	A1	20060630	FR 2004-13813	2004 1223
<--				
FR 2880024	B1	20070202		2005
CN 101094871	A	20071226	CN 2005-80044413	1222
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JP 2008525547	T	20080717	JP 2007-547396	2005 1222
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EP 2054447	A1	20090506	EP 2005-825367	2005 1222
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MX 2007007755	A	20070817	MX 2007-7755	2007 0622
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KR 2007093069	A	20070917	KR 2007-714212	2007 0622

## 10550808-296659-EIC SEARCH

IN 2007DN04975	A	20070817	IN 2007-DN4975	2007
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PRIORITY APPLN. INFO.:			FR 2004-13813	A
				2004
				1223
<--				
			WO 2005-EP14169	W
				2005
				1222

ED    Entered STN: 30 Jun 2006  
 AB    The copolymers are prepared via controlled free-radical polymerization and comprise 55 mol% at least one hydrophilic monomer and 45 mol% at least one hydrophobic monomer. Thus, 20.7 g acrylic acid and 30 g styrene were polymerized in 139 g 1,4-dioxane at 120° for 240 min in the presence of 5 mol% N-tert-butyl-N-(1-diethylphosphono-2,2-dimethylpropyl) nitroxide and 2-methyl-2-[N-tert-butyl-N-(diethoxyphosphoryl-2,2-dimethylpropyl)amino]propionic acid to give a title copolymer.  
 IT    188526-94-5, N-Tert-butyl-N-(1-diethylphosphono-2,2-dimethylpropyl) nitroxide  
 RL: CAT (Catalyst use); USES (Uses)  
       (preparation of copolymers with a composition gradient as sole stabilizer in emulsion free-radical polymerization)  
 RN    188526-94-5    HCAPLUS  
 CN    Nitroxide, 1-(diethoxyphosphinyl)-2,2-dimethylpropyl  
       1,1-dimethylethyl    (CA INDEX NAME)



IT    25852-37-3R, Butyl acrylate-methyl methacrylate copolymer  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
       (use of copolymers with a composition gradient as sole stabilizer in emulsion free-radical polymerization)  
 RN    25852-37-3    HCAPLUS  
 CN    2-Propenoic acid, 2-methyl-, methyl ester, polymer with butyl 2-propenoate    (CA INDEX NAME)

CM    1  
 CRN    141-32-2  
 CMF    C7 H12 O2



CM    2

CRN    80-62-6  
 CMF    C5 H8 O2



CC 35-4 (Chemistry of Synthetic High Polymers)  
 ST compn gradient copolymer stabilizer emulsion free  
 radical polymn  
 IT Polymerization  
 (emulsion; radical; use of copolymers with a composition  
 gradient as sole stabilizer in emulsion free-radical polymerization)  
 IT Stabilizing agents  
 (emulsion; use of copolymers with a composition gradient  
 as sole stabilizer in emulsion free-radical polymerization)  
 IT Adhesives  
 (hot-melt; use of copolymers with a composition gradient  
 as sole stabilizer in emulsion free-radical polymerization)  
 IT Polymerization  
 Polymerization catalysts  
 (living, radical; use of copolymers with a composition  
 gradient as sole stabilizer in emulsion free-radical polymerization)  
 IT Cosmetics  
 Latex  
 Paints  
 Surfactants  
 (use of copolymers with a composition gradient as sole  
 stabilizer in emulsion free-radical polymerization)  
 IT 188526-94-5, N-Tert-butyl-N-(1-diethylphosphono-2,2-  
 dimethylpropyl) nitroxide 654636-62-1,  
 2-Methyl-2-[N-tert-butyl-N-(diethoxyphosphoryl-2,2-  
 dimethylpropyl)aminoxy]propionic acid  
 RL: CAT (Catalyst use); USES (Uses)  
 (preparation of copolymers with a composition gradient as sole  
 stabilizer in emulsion free-radical polymerization)  
 IT 25085-34-1P, Acrylic acid-styrene copolymer  
 RL: IMF (Industrial manufacture); MOA (Modifier or additive use);  
 PREP (Preparation); USES (Uses)  
 (preparation of copolymers with a composition gradient as sole  
 stabilizer in emulsion free-radical polymerization)  
 IT 7727-21-1, Potassium persulfate  
 RL: CAT (Catalyst use); USES (Uses)  
 (use of copolymers with a composition gradient as sole  
 stabilizer in emulsion free-radical polymerization)  
 IT 9003-49-0P, Butyl acrylate homopolymer 9003-53-6P,  
 Polystyrene 25852-37-3P, Butyl acrylate-methyl  
 methacrylate copolymer  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (use of copolymers with a composition gradient as sole  
 stabilizer in emulsion free-radical polymerization)  
 IT 144-55-8, Carbonic acid monosodium salt, uses 151-21-3, Sodium  
 lauryl sulfate, uses 25155-30-0, Sodium dodecylbenzenesulfonate  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (use of copolymers with a composition gradient as sole  
 stabilizer in emulsion free-radical polymerization)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE  
 FOR THIS RECORD. ALL CITATIONS AVAILABLE  
 IN THE RE FORMAT

L57 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2006:29371 HCAPLUS Full-text  
 DOCUMENT NUMBER: 144129989  
 TITLE: Pressure-sensitive adhesive based on  
 acrylate block  
 copolymers.

## 10550808-296659-EIC SEARCH

INVENTOR(S): Husemann, Marc; Dollase, Thilo  
 PATENT ASSIGNEE(S): TESA AG, Germany  
 SOURCE: Eur. Pat. Appl., 20 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1614735	A1	20060111	EP 2005-105518	2005 0622 ---
DE 102004033242	A1	20060202	DE 2004-102004033242	2004 0708 ---
US 20060009552	A1	20060112	US 2005-116568	2005 0428 ---
JP 2006022329	A	20060126	JP 2005-192245	2005 0630 ---
CN 1888000	A	20070103	CN 2005-10081413	2005 0630 ---
BR 2005002510	A	20060221	BR 2005-2510	2005 0706 ---
PRIORITY APPLN. INFO.:				
DE 2004-102004033242A 2004 0708 ---				

ED Entered STN: 12 Jan 2006

AB A stable to diesel fuel pressure-sensitive acrylic adhesive comprises 250 weight% di- or triblock consisting of chemical distinguishable blocks of chain- extended acrylic and vinyl-acrylic monomers having softening temperature 20 - 175° and -130 - 10° accordingly useful inside automobile engine. Thus, mixing a solution containing 442 g 2-ethylhexyl acrylate, 35 g acrylic acid, 32 g chain extended polystyrene (prepared by radical polymerizing 362 g styrene and 3.64 g bis-2,2'-phenylethyltrithiocarbonate in the presence of an initiator 10 h at 110°) and 0.12 g an initiator 24 h at 70° under Ar gave a triblock copolymer coated onto PET substrate and exhibiting after drying at 60° adhesion strength to steel 5.1 N/cm.

IT 61015-94-9, tert-Butyl 1-phenyl-2-methylpropyl nitroxide

RL: CAT (Catalyst use); USES (Uses)  
 (charge transfer agent; stable to diesel fuel  
 pressure-sensitive acrylic adhesive comprising di- or  
 triblock consisting of chemical distinguishable blocks  
 of chain- extended acrylic and vinyl-acrylic  
 monomers)

RN 61015-94-9 HCAPLUS

CN Nitroxide, 1,1-dimethylethyl 2-methyl-1-phenylpropyl (CA INDEX  
 NAME)



IT 755000-11-4R, Butyl acrylate-methyl methacrylate triblock copolymer  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation);  
 TEM (Technical or engineered material use); PREP (Preparation);  
 USES (Uses)

(stable to diesel fuel pressure-sensitive acrylic adhesive comprising di- or triblock consisting of chemical distinguishable blocks of chain- extended acrylic and vinyl-acrylic monomers)

RN 755000-11-4 HCPLUS

CN 2-Propenoic acid, 2-methyl, methyl ester, polymer with butyl 2-propenoate, triblock (CA INDEX NAME)

CM 1

CRN 141-32-2

CMF C7 H12 O2



CM 2

CRN 80-62-6

CMF C5 H8 O2



CC 38-3 (Plastics Fabrication and Uses)  
 ST stable diesel fuel pressure sensitive acrylic adhesive; acrylic vinyl block copolymer chain extended acrylic adhesive manuf

IT Adhesives  
 (hot-melt, pressure-sensitive, crosslinked; stable to diesel fuel pressure-sensitive acrylic adhesive comprising di- or triblock consisting of chemical distinguishable blocks of chain- extended acrylic and vinyl-acrylic monomers)

IT Crosslinking  
 Crosslinking catalysts  
 (photochem.; stable to diesel fuel pressure-sensitive acrylic adhesive comprising di- or triblock consisting of chemical distinguishable blocks of chain- extended acrylic and vinyl-acrylic monomers)

IT Chain transfer agents  
 (stable to diesel fuel pressure-sensitive acrylic adhesive comprising di- or triblock consisting of chemical distinguishable blocks of chain- extended acrylic and vinyl-acrylic monomers)

IT Internal combustion engines

10550808-296659-EIC SEARCH

(stable to diesel fuel pressure-sensitive acrylic adhesive comprising di- or triblock consisting of chemical distinguishable blocks of chain- extended acrylic and vinyl-acrylic monomers used inside automobile engine)

IT Polyesters, miscellaneous  
 RL: MSC (Miscellaneous)  
 (stable to diesel fuel pressure-sensitive acrylic adhesive comprising di- or triblock consisting of chemical distinguishable blocks of chain-extended acrylic and vinyl-acrylic monomers)

IT 61015-94-9, tert-Butyl 1-phenyl-2-methylpropyl nitroxide  
 610803-43-5  
 RL: CAT (Catalyst use); USES (Uses)  
 (charge transfer agent; stable to diesel fuel pressure-sensitive acrylic adhesive comprising di- or triblock consisting of chemical distinguishable blocks of chain- extended acrylic and vinyl-acrylic monomers)

IT 108851-67-8  
 RL: CAT (Catalyst use); USES (Uses)  
 (charge transfer agent; stable to diesel fuel pressure-sensitive acrylic adhesive comprising di- or triblock consisting of chemical distinguishable blocks of chain-extended acrylic and vinyl-acrylic monomers)

IT 755000-11-4P, Butyl acrylate-methyl methacrylate triblock copolymer 783197-37-6P, Acrylic acid-butyl acrylate-isobornyl acrylate-styrene triblock copolymer  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (stable to diesel fuel pressure-sensitive acrylic adhesive comprising di- or triblock consisting of chemical distinguishable blocks of chain- extended acrylic and vinyl-acrylic monomers)

IT 25038-59-9, Pet, miscellaneous  
 RL: MSC (Miscellaneous)  
 (substrate; stable to diesel fuel pressure-sensitive acrylic adhesive comprising di- or triblock consisting of chemical distinguishable blocks of chain-extended acrylic and vinyl-acrylic monomers)

IT 842132-41-6P  
 RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (triblock; stable to diesel fuel pressure-sensitive acrylic adhesive comprising di- or triblock consisting of chemical distinguishable blocks of chain- extended acrylic and vinyl-acrylic monomers)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE  
 FOR THIS RECORD. ALL CITATIONS AVAILABLE  
 IN THE RE FORMAT

L57 ANSWER 3 OF 8 HCPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2005:731281 HCPLUS Full-text  
 DOCUMENT NUMBER: 143:194410  
 TITLE: Method for radical emulsion polymerization with water-soluble alkoxyamines  
 INVENTOR(S): Charleux, Bernadette; Guerret, Olivier;  
 Magnet, Stephanie; Nicolas, Julien  
 ARKEMA, Fr.  
 PATENT ASSIGNEE(S): Fr. Demande, 33 pp.  
 SOURCE: CODEN: FRXXBL  
 DOCUMENT TYPE: Patent  
 LANGUAGE: French

## 10550808-296659-EIC SEARCH

FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2866026	A1	20050812	FR 2004-1150	2004 0206
			<--	
FR 2866026	B1	20080523		
WO 2005082945	A1	20050909	WO 2005-FR234	2005 0203
			<--	
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TH, TR, TT, TZ, UA, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MN, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1711536	A1	20061018	EP 2005-717546	2005 0203
			<--	
EP 1711536	B1	20080423		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL, SK, IS				
CN 1938338	A	20070328	CN 2005-80010393	2005 0203
			<--	
JP 2007520613	T	20070726	JP 2006-551881	2005 0203
			<--	
AT 393172	T	20080515	AT 2005-717546	2005 0203
			<--	
ES 2303232	T3	20080801	ES 2005-717546	2005 0203
			<--	
IN 2006DN04329	A	20070713	IN 2006-DN4329	2006 0727
			<--	
US 20070123669	A1	20070531	US 2006-588118	2006 0801
			<--	
KR 2007001124	A	20070103	KR 2006-715803	2006 0804
			<--	
PRIORITY APPLN. INFO.:			FR 2004-1150	A 2004 0206
			<--	

ED Entered STN: 12 Aug 2005

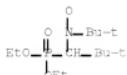
AB Polymers with controlled chain structure are manufactured by radical-emulsion polymerization in the presence of water-soluble R12C(CO2R2)ON(CMe3)CH(CMe3)P(O)(OEt)2 (R1 = Cl-3 alkyl, R2 = Li, Na, K, NH4, NBu4, NHBu3) (I). I is useful for the manufacture of diblock and triblock polymers.

IT 188526-94-5, SGL

RL: RCT (Reactant); RACT (Reactant or reagent)  
(alkoxyamine precursor; radical emulsion polymerization using water-soluble alkoxyamines having diethoxyphosphoryl groups)

RN 188526-94-5 HCAPLUS

CN Nitroxide, 1-(diethoxyphosphinyl)-2,2-dimethylpropyl 1,1-dimethylethyl (CA INDEX NAME)



IT 108501-19-5P, Butyl acrylate-methyl

methacrylate-styrene block copolymer

254100-02-2P, 2-Hydroxyethyl acrylate-methyl

methacrylate-styrene block copolymer

736998-33-7P, Ethyl acrylate-methyl

methacrylate diblock copolymer

755000-11-4P, Butyl acrylate-methyl

methacrylate triblock copolymer

861432-32-8P, 2-Methoxyethyl acrylate-methyl

acrylate-methyl methacrylate block

copolymer 861721-40-6P, Methyl

methacrylate-perfluorooctyl acrylate diblock

copolymer 861721-43-9P, Methyl

methacrylate-octyl acrylate diblock

copolymer

RL: IMF (Industrial manufacture); PREP (Preparation)

(radical emulsion polymerization using water-soluble alkoxyamines having diethoxyphosphoryl groups)

RN 108501-19-5 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with butyl 2-propenoate and ethenylbenzene, block (CA INDEX NAME)

CM 1

CRN 141-32-2

CMF C7 H12 O2



CM 2

CRN 100-42-5

CMF C8 H8

H2C=CH-Ph

CM 3

CRN 80-62-6  
CMF C5 H8 O2

RN 254100-02-2 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with  
 ethenylbenzene and 2-hydroxyethyl 2-propenoate, block (9CI) (CA  
 INDEX NAME)

CM 1

CRN 818-61-1  
CMF C5 H8 O3

CM 2

CRN 100-42-5  
CMF C8 H8H2C=CH-Ph

CM 3

CRN 80-62-6  
CMF C5 H8 O2

RN 736998-33-7 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with ethyl  
 2-propenoate, diblock (9CI) (CA INDEX NAME)

CM 1

CRN 140-88-5  
CMF C5 H8 O2

CM 2

CRN 80-62-6  
CMF C5 H8 O2

RN 755000-11-4 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with butyl  
 2-propenoate, triblock (CA INDEX NAME)

CM 1

CRN 141-32-2  
CMF C7 H12 O2

CM 2

CRN 80-62-6  
CMF C5 H8 O2

RN 861432-32-8 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with  
 2-methoxyethyl 2-propenoate and methyl 2-propenoate, block (9CI)  
 (CA INDEX NAME)

CM 1

CRN 3121-61-7  
CMF C6 H10 O3



CM 2

CRN 96-33-3  
CMF C4 H6 O2

CM 3

CRN 80-62-6  
CMF C5 H8 O2

RN 861721-40-6 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with  
 heptadecafluoroctyl 2-propenoate, diblock (9CI) (CA INDEX NAME)

CM 1

CRN 15498-45-0  
CMF C11 H3 F17 O2

CM 2

CRN 80-62-6  
CMF C5 H8 O2

RN 861721-43-9 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with octyl  
 2-propenoate, diblock (9CI) (CA INDEX NAME)

CM 1

CRN 2499-59-4  
CMF C11 H20 O2

CM 2

CRN 80-62-6  
CMF C5 H8 O2

IC ICM C08F002-38  
 ICS C08F002-24; C08F004-00; C08F293-00  
 CC 35-3 (Chemistry of Synthetic High Polymers)  
 IT 2052-01-9, 2-Bromo-2-methylpropionic acid 188526-94-5,  
 SGI  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (alkoxyamine precursor; radical emulsion polymerization using  
 water-soluble alkoxyamines having diethoxyphosphoryl groups)  
 IT 9003-49-0P, Polybutyl acrylate 9003-53-6P, Polystyrene  
 26914-43-2P, Styrenesulfonic acid, diblock copolymers  
 with styrene 105935-35-1P, Butadiene-methyl methacrylate  
 -styrene block copolymer 108146-73-2P,  
 Acrylonitrile-butadiene-styrene block  
 copolymer 108501-19-5P, Butyl acrylate  
 -methyl methacrylate-styrene block  
 copolymer 150949-61-4P, Acrylonitrile  
 -isoprene-styrene block copolymer  
 254100-02-2P, 2-Hydroxyethyl acrylate-methyl  
 methacrylate-styrene block copolymer  
 694491-73-1P, Butadiene-styrene triblock copolymer  
 696598-57-9P, Methyl methacrylate-styrene diblock  
 copolymer 700836-36-8P, Isoprene-styrene triblock  
 copolymer 705279-67-0P, Butyl acrylate-styrene  
 triblock copolymer 710336-30-4P, Butyl  
 acrylate-styrene diblock copolymer  
 725713-28-0P, Butadiene-methyl methacrylate diblock  
 copolymer 725718-17-2P, Styrene-vinyl acetate diblock  
 copolymer 736998-33-7P, Ethyl acrylate  
 -methyl methacrylate diblock copolymer  
 737001-22-8P, Acrylamide-styrene diblock  
 copolymer 753015-41-7P, 2-Ethylhexyl acrylate  
 -styrene diblock copolymer 755600-11-4P, Butyl  
 acrylate-methyl methacrylate triblock  
 copolymer 861432-30-6P, Methacrylamide-styrene  
 diblock copolymer 861432-31-7P, Perfluorooctyl  
 acrylate-stearyl acrylate diblock  
 copolymer 861432-32-8P, 2-Methoxyethyl  
 acrylate-methyl acrylate-methyl  
 methacrylate block copolymer  
 861721-40-6P, Methyl methacrylate-perfluorooctyl

## 10550808-296659-EIC SEARCH

acrylate diblock copolymer 861721-41-7P,  
 Perfluoroctyl acrylate-styrene diblock  
 copolymer 861721-42-8P, Behenyl acrylate  
 -perfluoroctyl acrylate diblock copolymer  
 861721-43-9P, Methyl methacrylate-octyl  
 acrylate diblock copolymer

RL: IMF (Industrial manufacture); PREP (Preparation)  
 (radical emulsion polymerization using water-soluble alkoxyamines having  
 diethoxyphosphoryl groups)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE  
 FOR THIS RECORD. ALL CITATIONS AVAILABLE  
 IN THE RE FORMAT

L57 ANSWER 4 OF 8 HCPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2005:521786 HCPLUS Full-text  
 DOCUMENT NUMBER: 1431:60699  
 TITLE: Method for preparation of block  
 copolymers and their uses in adhesive  
 compositions  
 INVENTOR(S): Magnet, Stephanie; Guerret, Olivier; Passade,  
 Boupat Nicolas; Laurichesse, Christian; El  
 Bounia, Nour Eddine  
 PATENT ASSIGNEE(S): Arkema, Fr.  
 SOURCE: Fr. Demande, 40 pp.  
 CODEN: FRXXBL  
 DOCUMENT TYPE: Patent  
 LANGUAGE: French  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2863618	A1	20050617	FR 2003-14505	2003 1211
FR 2863618	B1	20060310		<--
WO 2005066232	A1	20050721	WO 2004-FR3153	2004 1208

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,  
 CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG,  
 ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP,  
 KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
 MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL,  
 PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR,  
 TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW  
 RW: BN, GH, GM, KE, LS, MN, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
 ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH,  
 CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT,  
 LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF,  
 CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

EP 1718688	A1	20061108	EP 2004-805661	2004 1208
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 EP 1718688 B1 20090506  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE,  
 MC, PT, IE, SI, LT, FI, RO, CY, TR, BG, CZ, EE, HU, PL,  
 SK, IS

CN 1914238	A	20070214	CN 2004-80041601	2004 1208
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 JP 2007516326 T 20070621 JP 2006-543582

## 10550808-296659-EIC SEARCH

				2004
				1208
			<--	
AT 430767	T	20090515	AT 2004-805661	
				2004
				1208
			<--	
KR 2007001074	A	20070103	KR 2006-711465	
				2006
				0609
			<--	
US 20070021568	Al	20070125	US 2006-582535	
				2006
				0609
			<--	
IN 2006DN03368	A	20070831	IN 2006-DN3368	
				2006
				0612
			<--	
PRIORITY APPLN. INFO.:			FR 2003-14505	A
				2003
				1211
			<--	
			WO 2004-FR3153	W
				2004
				1208
			<--	

ED Entered STN: 17 Jun 2005

AB Polymers, useful as hot-melt, pressure-sensitive adhesives, have linear or star blocks, are manufactured by radical polymerization controlled by nitroxides and initiated by alkoxyamines of nitroxides, and have  $\geq 1$  soft block with  $T_g < 0^\circ$  and  $\geq 1$  hard block having  $T_g$  higher than room temperature. A typical ABA triblock polymer was manufactured by radical polymerization of 118 kg Bu acrylate (I) (B blocks) in PhEt in the presence of  $(EtO)_2P(O)C(Me)_3N(Me)_3O$  (II) and a carboxyldimethylmethyl ether of II at  $114^\circ$  until 50% I conversion, removal of unreacted I and solvent, and polymerization of 100 kg styrene (A blocks) in the presence of the intermediate.

IT 188526-94-5 188526-94-5D, carboxyldimethylmethyl ether

RL: CAT (Catalyst use); USES (Uses)  
(preparation of block copolymers by  
nitroxide-controlled, alkoxyamine-initiated radical polymerization for  
hot-melt, pressure-sensitive adhesives)

RN 188526-94-5 HCPLUS

CN Nitroxide, 1-(diethoxyphosphinyl)-2,2-dimethylpropyl  
1,1-dimethylethyl (CA INDEX NAME)



RN 188526-94-5 HCPLUS

CN Nitroxide, 1-(diethoxyphosphinyl)-2,2-dimethylpropyl  
1,1-dimethylethyl (CA INDEX NAME)



IT 853956-28-2P, Butyl acrylate-methacrylic acid-styrene triblock copolymer  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (preparation of block copolymers by nitroxide-controlled, alkoxyamine-initiated radical polymerization for hot-melt, pressure-sensitive adhesives)  
 RN 853956-28-2 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, polymer with butyl 2-propenoate and ethenylbenzene, triblock (CA INDEX NAME)

CM 1

CRN 141-32-2  
 CMF C7 H12 O2

CM 2

CRN 100-42-5  
 CMF C8 H8

CM 3

CRN 79-41-4  
 CMF C4 H6 O2

IC ICM C08F293-00  
 ICS C09J153-00; C09J007-02; G09F003-10  
 CC 37-3 (Plastics Manufacture and Processing)  
 ST block polymer manuf nitroxide controlled alkoxyamine initiated; hot melt adhesive butyl acrylate styrene triblock copolymer manuf; pressure sensitive adhesive butyl acrylate styrene triblock copolymer manuf

IT Amines, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (alkoxy-; preparation of block copolymers by  
 nitroxide-controlled, alkoxyamine-initiated radical polymerization for  
 hot-melt, pressure-sensitive adhesives)

IT Phosphonates  
 RL: CAT (Catalyst use); USES (Uses)  
 (diethoxyphosphinyl-tert-butylmethyl-tert-butylaminoxy  
 derivs.; preparation of block copolymers by  
 nitroxide-controlled, alkoxyamine-initiated radical polymerization for  
 hot-melt, pressure-sensitive adhesives)

IT Adhesives  
 (hot-melt, pressure-sensitive; preparation of block  
 copolymers by nitroxide-controlled,  
 alkoxyamine-initiated radical polymerization for hot-melt,  
 pressure-sensitive adhesives)

IT Salts, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (of alkoxyamino phosphonate esters; preparation of block  
 copolymers by nitroxide-controlled,  
 alkoxyamine-initiated radical polymerization for hot-melt,  
 pressure-sensitive adhesives)

IT Amines, uses  
 RL: CAT (Catalyst use); USES (Uses)  
 (polyamines, nonpolymeric, polyethylene-,  
 diethoxyphosphinyl-tert-butylmethyl-tert-butylaminoxy derivs.;  
 preparation of block copolymers by  
 nitroxide-controlled, alkoxyamine-initiated radical polymerization for  
 hot-melt, pressure-sensitive adhesives)

IT Polyamines  
 RL: CAT (Catalyst use); USES (Uses)  
 (polyethylene-, diethoxyphosphinyl-tert-butylmethyl-tert-  
 butylaminoxy derivs.; preparation of block  
 copolymers by nitroxide-controlled,  
 alkoxyamine-initiated radical polymerization for hot-melt,  
 pressure-sensitive adhesives)

IT Nitroxides  
 RL: CAT (Catalyst use); USES (Uses)  
 (preparation of block copolymers by  
 nitroxide-controlled, alkoxyamine-initiated radical polymerization for  
 hot-melt, pressure-sensitive adhesives)

IT Polymerization catalysts  
 (radical; preparation of block copolymers by  
 nitroxide-controlled, alkoxyamine-initiated radical polymerization for  
 hot-melt, pressure-sensitive adhesives)

IT 107-21-1D, Ethylene glycol,  
 diethoxyphosphinyl-tert-butylmethyl-tert-butylaminoxy derivs.  
 110-63-4D, 1,4-Butanediol,  
 diethoxyphosphinyl-tert-butylmethyl-tert-butylaminoxy derivs.  
 504-63-2D, 1,3-Propanediol,  
 diethoxyphosphinyl-tert-butylmethyl-tert-butylaminoxy derivs.  
 629-11-8D, 1,6-Hexanediol,  
 diethoxyphosphinyl-tert-butylmethyl-tert-butylaminoxy derivs.  
 839-90-7D, 1,3,5-Tris(2-hydroxyethyl)cyanuric acid,  
 diethoxyphosphinyl-tert-butylmethyl-tert-butylaminoxy derivs.  
 7429-90-5D, Aluminum, salts with alkoxyamino phosphonate esters  
 7439-89-6D, Iron, salts with alkoxyamino phosphonate esters  
 7439-95-4D, Magnesium, salts with alkoxyamino phosphonate esters  
 7439-96-5D, Manganese, salts with alkoxyamino phosphonate esters  
 7439-98-7D, Molybdenum, salts with alkoxyamino phosphonate esters  
 7440-02-0D, Nickel, salts with alkoxyamino phosphonate esters  
 7440-05-3D, Palladium, salts with alkoxyamino phosphonate esters  
 7440-06-4D, Platinum, salts with alkoxyamino phosphonate esters  
 7440-22-4D, Silver, salts with alkoxyamino phosphonate esters  
 7440-31-5D, Tin, salts with alkoxyamino phosphonate esters  
 7440-32-6D, Titanium, salts with alkoxyamino phosphonate esters  
 7440-33-7D, Tungsten, salts with alkoxyamino phosphonate esters

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7440-47-3D, Chromium, salts with alkoxyamino phosphonate esters  
 7440-48-4D, Cobalt, salts with alkoxyamino phosphonate esters  
 7440-50-8D, Copper, salts with alkoxyamino phosphonate esters  
 7440-57-5D, Gold, salts with alkoxyamino phosphonate esters  
 7440-66-6D, Zinc, salts with alkoxyamino phosphonate esters  
 7440-67-7D, Zirconium, salts with alkoxyamino phosphonate esters  
 7440-70-2D, Calcium, salts with alkoxyamino phosphonate esters  
 43190-26-7D, 1,3,5-Tris(2-Aminoethyl)cyanuric acid,  
 diethoxyphosphinyl-tert-butylmethyl-tert-butylaminoxy derivs.  
 53544-93-7 188526-94-5 188526-94-5D,  
 carbonyldimethylmethyl ether  
 RL: CAT (Catalyst use); USES (Uses)  
 (preparation of block copolymers by  
 nitroxide-controlled, alkoxyamine-initiated radical polymerization for  
 hot-melt, pressure-sensitive adhesives)  
 IT 705279-67-0P, Butyl acrylate-styrene triblock  
 copolymer 832077-83-5P, Acrylic acid-butyl  
 acrylate-styrene triblock copolymer  
 853956-28-2P, Butyl acrylate-methacrylic  
 acid-styrene triblock copolymer  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical  
 or engineered material use); PREP (Preparation); USES (Uses)  
 (preparation of block copolymers by  
 nitroxide-controlled, alkoxyamine-initiated radical polymerization for  
 hot-melt, pressure-sensitive adhesives)  
 REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE  
 FOR THIS RECORD. ALL CITATIONS AVAILABLE  
 IN THE RE FORMAT

L57 ANSWER 5 OF 8 HCPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2005:361852 HCPLUS Full-text  
 DOCUMENT NUMBER: 142:411841  
 TITLE: Process for the preparation of  
 polyalkoxyamines for use as initiators in  
 radical polymerization  
 INVENTOR(S): Magnet, Stephanie; Guerret, Olivier;  
 Couturier, Jean-Luc  
 PATENT ASSIGNEE(S): Arkema, Fr.  
 SOURCE: Eur. Pat. Appl., 14 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: French  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1526138	A1	20050427	EP 2004-292480	2004 1019 ---
FR 2861394	A1	20050429	FR 2003-12452	2003 1024 ---
FR 2861394	B1	20060120		
CA 2482501	A1	20050424	CA 2004-2482501	2004 1019 ---
IN 2004DE02045	A	20060908	IN 2004-DE2045	2004

## 10550808-296659-EIC SEARCH

				1019
AT 390431	T	20080415	AT 2004-292480	2004 1019
ES 2303030	T3	20080801	ES 2004-292480	2004 1019
US 20050107577	A1	20050519	US 2004-969711	2004 1020
US 7199214 KR 2005039667	B2 A	20070403 20050429	KR 2004-84932	2004 1022
CN 1629136	A	20050622	CN 2004-10095971	2004 1022
JP 2005126442	A	20050519	JP 2004-309512	2004 1025
JP 3978519 IN 2007DE00416	B2 A	20070919 20070824	IN 2007-DE416	2007 0227
PRIORITY APPLN. INFO.:			FR 2003-12452	A 2003 1024
			US 2003-514287P	P 2003 1024
			IN 2004-DE2045	A3 2004 1019

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ED Entered STN: 28 Apr 2005

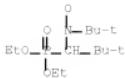
AB Polyalkoxyamines, useful as initiators without purification from preparation mixts. for radical polymerization especially in manufacture of block polymers, are prepared by reaction of  $R1_2C(CO_2R2)ON(CMe_3)CH(CMe_3)P(O)(OBt)_2$  ( $R1 = C1-3$  alkyl,  $R2 = H, Cl-8$  alkyl, Ph, Li, Na, K,  $NH_4^+$ , or  $NHBu_3^+$ ) (I) with  $Z(CH:CH_2)_n$  [ $Z =$  aryl or  $Z1(XCO)n$ ;  $Z1 =$  polyfunctional compound such as polyol,  $X = O, N$  having a C-containing group, or H, or S;  $n \geq 2$ ] (II) optionally in a solvent at 0-90° and I-II mol ratio n-1.5n. A typical polyalkoxyamine was manufactured by reaction of 42.1 g 2-bromo-2-methylpropionic acid 90 min with 78.9 g ( $EtO_2P(O)CH(CMe_3)N(CMe_3)O$ ) in PhMe in the presence of Cu, CuBr, and  $N,N,N',N''$ -pentamethyldiethylenetriamine and reaction of 2 g resulting monoalkoxyamine 20 h at reflux with 0.55 g 1,4-butanediol diacrylate in EtOH.

IT 188526-94-5

RL: RCT (Reactant); RACT (Reactant or reagent)  
(precursor; preparation of polyalkoxyamines for use as initiators in radical polymerization)

RN 188526-94-5 HCPLUS

CN Nitroxide, 1-(diethoxyphosphinyl)-2,2-dimethylpropyl  
1,1-dimethylethyl (CA INDEX NAME)



IT 755000-11-4P, Butyl acrylate-methyl methacrylate triblock copolymer  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (preparation of polyalkoxyamines for use as initiators in radical polymerization)  
 RN 755000-11-4 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with butyl 2-propenoate, triblock (CA INDEX NAME)

CM 1

CRN 141-32-2  
 CMF C7 H12 O2



CM 2

CRN 80-62-6  
 CMF C5 H8 O2



IC ICM C07F009-40  
 ICS C08G073-00  
 CC 35-4 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 29  
 ST phosphonate ester polyalkoxyamine initiator radical polymn unsatd compd; methylpropionic acid phosphonate ester butanediol diacrylate adduct manuf  
 IT 9003-49-0P, Polybutyl acrylate  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (block polymer precursor; preparation of polyalkoxyamines for use as initiators in radical polymerization)  
 IT 502-44-3D, Caprolactone, dipentaerythritol hexaacrylate derivs. 1070-70-8, 4-Butanediol diacrylate 1321-74-0, Divinylbenzene, reactions 1322-23-2, Trivinylbenzene 1680-21-3, Triethylene glycol diacrylate 2052-01-9, 2-Bromo-2-methylpropionic acid 2223-82-7, Neopentyl glycol diacrylate 2274-11-5, Ethylene glycol diacrylate 3524-68-3, Pentaerythritol triacrylate 4074-88-8, Diethylene glycol diacrylate 4491-03-6, Bisphenol A diacrylate 4986-89-4, Pentaerythritol tetraacrylate 13048-33-4, 1,6-Hexanediol

diacrylate 15625-89-5, Trimethylolpropane  
 triacrylate 19485-03-1, 1,3-Butanediol  
 diacrylate 26570-48-9, Polyethylene glycol  
 diacrylate 28961-43-5, Ethoxylated trimethylolpropane  
 triacrylate 29570-58-9D, Dipentaerythritol  
 hexaerylate, caprolactone derivs. 40220-08-4,  
 Tris(2-hydroxyethyl)isocyanurate triacrylate  
 51728-26-8, Ethoxylated pentaerythritol tetraacrylate  
 52408-84-1, Propoxylated glycerol triacrylate  
 53879-54-2, Propoxylated trimethylolpropane triacrylate  
 60506-81-2, Dipentaerythritol pentaacrylate 64401-02-1  
 94108-97-1, D trimethylolpropane tetraacrylate  
 124452-51-3, Cyclohexanediethanol diacrylate  
 188526-94-5

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (precursor; preparation of polyalkoxyamines for use as initiators in  
 radical polymerization)

IT 755000-11-4P, Butyl acrylate-methyl

methacrylate triblock copolymer

RL: IMF (Industrial manufacture); PREP (Preparation)  
 (preparation of polyalkoxyamines for use as initiators in radical  
 polymerization)

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE  
 FOR THIS RECORD. ALL CITATIONS AVAILABLE  
 IN THE RE FORMAT

L57 ANSWER 6 OF 8 HCPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2003:1815236 HCPLUS Full-text  
 DOCUMENT NUMBER: 139:308633  
 TITLE: Acrylate block  
 copolymers used as pressure-sensitive  
 adhesives for medical applications  
 INVENTOR(S): Husemann, Marc; Dollase, Thilo; Kummer,  
 Andreas Burkhard  
 PATENT ASSIGNEE(S): Tesa AG, Germany; Beiersdorf AG  
 SOURCE: Ger. Offen., 10 pp.  
 CODEN: GWXXBX

DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10246503	A1	20031016	DE 2002-10246503	
				2002
				1004
			---	
			DE 2002-10213759	IA
				2002
				0326
			---	

PRIORITY APPLN. INFO.:

ED Entered STN: 17 Oct 2003  
 AB Acrylate block copolymers or mixts. of acrylate block copolymers are used as pressure-sensitive adhesives for medical applications. Thus, Bu acrylate-styrene block copolymer was produced by RAFT polymerization of styrene in a first stage, the polymerization being carried out at 110° in the presence of 2,2'-azobis(2-methylbutanenitrile) (Vazo 67) and bis(2-phenylethyl) trithiocarbonate chain regulator, followed by addition of Bu acrylate/acetone and polymerization at 60° in the presence of Vazo 67. The block copolymer was applied onto a cotton textile substrate at 170° to produce bandages having good reversible adhesion to skin and good permeability to air and water vapor.

IT 61015-94-9, tert-Butyl 1-phenyl-2-methylpropyl nitroxide

RL: CAT (Catalyst use); USES (Uses)  
 (acrylate block copolymers used  
 as pressure-sensitive adhesives for medical applications)

RN 61015-94-9 HCPLUS

## 10550808-296659-EIC SEARCH

CN Nitroxide, 1,1-dimethylethyl 2-methyl-1-phenylpropyl (CA INDEX NAME)



IT 108501-18-4P, Butyl acrylate-methyl methacrylate block copolymer  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (acrylate block copolymers used as pressure-sensitive adhesives for medical applications)  
 RN 108501-18-4 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with butyl 2-propenoate, block (CA INDEX NAME)

CM 1

CRN 141-32-2  
 CMF C7 H12 O2



CM 2

CRN 80-62-6  
 CMF C5 H8 O2



IC ICM A61L015-58  
 ICS C09J153-00  
 CC 38-3 (Plastics Fabrication and Uses)  
 Section cross-reference(s): 63  
 ST acrylate block copolymer medical pressure sensitive adhesive  
 IT Medical goods (adhesive plasters; acrylate block copolymers used as pressure-sensitive adhesives for medical applications)  
 IT Medical goods (bandages; acrylate block copolymers used as pressure-sensitive adhesives for medical applications)  
 IT Polymerization (block, radical; acrylate block copolymers used as pressure-sensitive adhesives for medical applications)  
 IT Polymers, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)

(block; acrylate block  
copolymers used as pressure-sensitive adhesives for  
medical applications)

IT Adhesives  
(pressure-sensitive; acrylate block  
copolymers used as pressure-sensitive adhesives for  
medical applications)

IT Paper  
(substrate; acrylate block  
copolymers used as pressure-sensitive adhesives for  
medical applications)

IT Films  
Gels  
Textiles  
(substrates; acrylate block  
copolymers used as pressure-sensitive adhesives for  
medical applications)

IT Plastic foams  
RL: MSC (Miscellaneous)  
(substrates; acrylate block  
copolymers used as pressure-sensitive adhesives for  
medical applications)

IT 13472-08-7, Vazo 67 61015-94-9, tert-Butyl  
1-phenyl-2-methylpropyl nitroxide 610803-43-5  
RL: CAT (Catalyst use); USES (Uses)  
(acrylate block copolymers used  
as pressure-sensitive adhesives for medical applications)

IT 108801-18-4P, Butyl acrylate-methyl  
methacrylate block copolymer  
110772-34-4P, Butyl acrylate-styrene block  
copolymer  
RL: IMF (Industrial manufacture); TEM (Technical or engineered  
material use); THU (Therapeutic use); BIOL (Biological study);  
PREP (Preparation); USES (Uses)  
(acrylate block copolymers used  
as pressure-sensitive adhesives for medical applications)

IT 259195-14-7P, Bis(2-phenylethyl) trithiocarbonate  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP  
(Preparation); RACT (Reactant or reagent)  
(chain-transfer agent for block copolymer  
preparation; acrylate block copolymers  
used as pressure-sensitive adhesives for medical applications)

IT 75-15-0, Carbon disulfide, reactions 103-63-9, 2-Phenylethyl  
bromide  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(in production of chain-transfer agents for block  
copolymer preparation; acrylate block  
copolymers used as pressure-sensitive adhesives for  
medical applications)

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

L57 ANSWER 7 OF 8 HCPLUS COPYRIGHT 2009 ACS on STN  
ACCESSION NUMBER: 2002:597366 HCPLUS Full-text  
DOCUMENT NUMBER: 138:155056  
TITLE: Coatings by controlled radical polymerization  
AUTHOR(S): Callais, Peter; Guerret, Olivier  
CORPORATE SOURCE: USA  
SOURCE: European Coatings Journal (2002),  
(7-8), 16, 18, 21-22, 24-25  
CODEN: ECOJEF; ISSN: 0930-3847  
PUBLISHER: Vincentz Verlag  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
ED Entered STN: 12 Aug 2002

AB Several techniques have been researched to develop ways to control free radical polymers, and terms like "Controlled Radical Polymerization" (CRP) or "living" free radical polymers, have been used to describe the process. The key aspect in CRP is its ability to eliminate the termination of growing free radical chains. This facilitates the synthesis of polymers with low polydispersities, as well as co- and multi-block copolymers. This technol. also allows well-defined polymer modification and grafting. Now, there is a family of nitroxide derivs. that can be applied to a wide range of free radical polymers, to perform controlled radical polymer synthesis. This paper will examine the use of two nitroxide compds., namely SG-1 and Monams, to synthesize acrylic High Solids Coating (HSC) resins with low polydispersities.

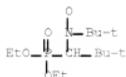
IT 188526-94-5D, alkoxyamine derivs.

RL: CAT (Catalyst use); USES (Uses)

(Monams; use of nitroxide compds. in controlled radical polymerization for preparation of acrylic coatings)

RN 188526-94-5 HCAPLUS

CN Nitroxide, 1-(diethoxyphosphinyl)-2,2-dimethylpropyl  
1,1-dimethylethyl (CA INDEX NAME)



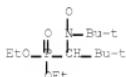
IT 188526-94-5, SG 1

RL: CAT (Catalyst use); USES (Uses)

(SG 1 (initiator); use of nitroxide compds. in controlled radical polymerization for preparation of acrylic coatings)

RN 188526-94-5 HCAPLUS

CN Nitroxide, 1-(diethoxyphosphinyl)-2,2-dimethylpropyl  
1,1-dimethylethyl (CA INDEX NAME)



IT 136456-42-3P, Butyl methacrylate-butyl acrylate-styrene block copolymer

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(use of nitroxide compds. in controlled radical polymerization for preparation of acrylic coatings)

RN 136456-42-3 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, butyl ester, polymer with butyl 2-propenoate and ethenylbenzene, block (9CI) (CA INDEX NAME)

CM 1

CRN 141-32-2

CMF C7 H12 O2



CM 2

CRN 100-42-5  
CMF C8 H8

CM 3

CRN 97-88-1  
CMF C8 H14 O2

CC 42-7 (Coatings, Inks, and Related Products)  
 Section cross-reference(s): 35  
 ST nitroxide controlled radical polymer acrylic coating  
 IT Nitroxides  
 RL: CAT (Catalyst use); USES (Uses)  
 (polymerization catalysts; use of nitroxide compds. in controlled  
 radical polymerization for preparation of acrylic coatings)  
 IT Coating materials  
 Polymerization  
 Polymerization catalysts  
 (use of nitroxide compds. in controlled radical polymerization for  
 preparation of acrylic coatings)  
 IT 188526-94-5D, alkoxyamine derivs.  
 RL: CAT (Catalyst use); USES (Uses)  
 (Monams; use of nitroxide compds. in controlled radical polymerization  
 for preparation of acrylic coatings)  
 IT 188526-94-5, SG 1  
 RL: CAT (Catalyst use); USES (Uses)  
 (SG 1 (initiator); use of nitroxide compds. in controlled  
 radical polymerization for preparation of acrylic coatings)  
 IT 110772-34-4P, Butyl acrylate-styrene block  
 copolymer 136456-42-3P, Butyl  
 methacrylate-butyl acrylate-styrene  
 block copolymer  
 RL: SPN (Synthetic preparation); TEM (Technical or engineered  
 material use); PREP (Preparation); USES (Uses)  
 (use of nitroxide compds. in controlled radical polymerization for  
 preparation of acrylic coatings)  
 REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE  
 FOR THIS RECORD. ALL CITATIONS AVAILABLE  
 IN THE RE FORMAT

L57 ANSWER 8 OF 8 HCPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2000:34601 HCPLUS Full-text  
 DOCUMENT NUMBER: 132:79008  
 TITLE: Emulsion polymerization in the presence of a  
 stable free radical  
 INVENTOR(S): Charleux, Bernadette; Lansalot, Muriel; Pirri,

## 10550808-296659-EIC SEARCH

Rosangela; Vairon, Jean-Pierre; Denie,

Sandrine

PATENT ASSIGNEE(S): Elf Atochem S.A., Fr.; Atofina  
SOURCE: Eur. Pat. Appl., 21 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: French

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 970973	A1	20000112	EP 1999-112156	1999 0624
			<--	
EP 970973	B1	20041208		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
FR 2781486	A1	20000128	FR 1998-8916	1998 0710
			<--	
FR 2781486	B1	20000908		
FR 2781487	A1	20000128	FR 1999-3941	1999 0330
			<--	
FR 2781487	B1	20001208		
AT 284419	T	20041215	AT 1999-112156	1999 0624
			<--	
ES 2235401	T3	20050701	ES 1999-112156	1999 0624
			<--	
KR 2000011514	A	20000225	KR 1999-27050	1999 0706
			<--	
US 6353065	B1	20020305	US 1999-347573	1999 0706
			<--	
CA 2277696	A1	20000110	CA 1999-2277696	1999 0709
			<--	
CA 2277696	C	20060905		
CN 1241577	A	20000119	CN 1999-111298	1999 0710
			<--	
CN 1149228	C	20040512		
CN 1478802	A	20040303	CN 2003-2003145856	1999 0710
			<--	
CN 101134801	A	20080305	CN 2006-10101193	1999 0710
			<--	
JP 2000044610	A	20000215	JP 1999-229995	1999 0712

## 10550808-296659-EIC SEARCH

PRIORITY APPLN. INFO.:

<--	FR 1998-8916	A
		1998
		0710
<--	FR 1999-3941	A
		1999
		0330
<--	CN 2003-2003145856	A3
		1999
		0710

&lt;--

ED Entered STN: 14 Jan 2000

AB Radically polymerizable monomers are emulsion-polymerized in the presence of stable free radicals, so that the aqueous phase contains 25% water and the organic phase contains 55% monomer. This process gives polymers with low polydispersity and good linearity, and the manufacture of block polymers is possible. Thus, emulsion-polymerization of a mixture containing water 23.9, ethylene glycol (I) 71.7, Na styrenesulfonate 28.72, Na2HPO4 0.1835, 4,4'-azobis(cyano-4-pentanoic acid) 0.44, N-tert-butyl-1-diethylphosphono-2,2-dimethylpropylnitroxide (II) 0.8, and NaOH 0.106 g 48 h at 125° under N<sub>2</sub> and polymerization of a mixture containing water 7.5, I 22.5, resulting polymer 5, styrene 1, and II 0.8 g 24 h at 125° gave a block copolymer.

IT 108501-19-5P, Butyl acrylate-methyl methacrylate-styrene block copolymer  
 121917-49-5P, Ethyl acrylate-methyl methacrylate block copolymer  
 254100-02-2P, 2-Hydroxyethyl acrylate-methyl methacrylate-styrene block copolymer  
 254100-03-3P, Methyl methacrylate-perfluorooctyl acrylate block copolymer  
 254100-05-5P 254100-06-6P, Methyl methacrylate-octyl acrylate block copolymer

RL: IMF (Industrial manufacture); PREP (Preparation)  
 (emulsion polymerization in the presence of stable free radicals)

RN 108501-19-5 HCPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with butyl 2-propenoate and ethenylbenzene, block (CA INDEX NAME)

CM 1

CRN 141-32-2

CMF C7 H12 O2



CM 2

CRN 100-42-5

CMF C8 H8



CM 3

CRN 80-62-6  
 CMF C5 H8 O2



RN 121917-49-5 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with ethyl 2-propenoate, block (9CI) (CA INDEX NAME)

CM 1

CRN 140-88-5  
 CMF C5 H8 O2



CM 2

CRN 80-62-6  
 CMF C5 H8 O2



RN 254100-02-2 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with ethenylbenzene and 2-hydroxyethyl 2-propenoate, block (9CI) (CA INDEX NAME)

CM 1

CRN 818-61-1  
 CMF C5 H8 O3



CM 2

CRN 100-42-5  
 CMF C8 H8



CM 3

CRN 80-62-6  
CMF C5 H8 O2RN 254100-03-3 HCPLUS  
CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with  
heptadecafluoroctyl 2-propenoate, block (9CI) (CA INDEX NAME)

CM 1

CRN 15498-45-0  
CMF C11 H3 F17 O2

CM 2

CRN 80-62-6  
CMF C5 H8 O2RN 254100-05-5 HCPLUS  
CN 2-Propenoic acid, 2-methyl-, octadecyl ester, polymer with  
heptadecafluoroctyl 2-propenoate, block (9CI) (CA INDEX NAME)

CM 1

CRN 32360-05-7  
CMF C22 H42 O2

CM 2

CRN 15498-45-0  
CMF C11 H3 F17 02



RN 254100-06-6 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with octyl 2-propenoate, block (9CI) (CA INDEX NAME)

CM 1

CRN 2499-59-4  
CMF C11 H20 O2

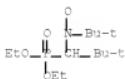


CM 2

CRN 80-62-6  
CMF C5 H8 02



IT 188526-94-5  
RL: NUU (Other use, unclassified); USES (Uses)  
(emulsion polymerization in the presence of stable free radicals)  
RN 188526-94-5 HCAPLUS  
CN Nitroxide, 1-(diethoxyphosphinyl)-2,2-dimethylpropyl  
1,1-dimethylethyl (CA INDEX NAME)



IC ICM C08F004-00  
ICS C08F002-38  
CC 35-4 (Chemistry of Synthetic High Polymers)  
ST emulsion block polym stable free radical;  
styrenesulfonate emulsion block polymn tertiary  
butyldiethylphosphonodi methylpropynitroxide; tertiary  
butyldiethylphosphonodi methylpropynitroxide emulsion  
block polymn styrene

IT Polymerization  
 (block; emulsion polymerization in the presence of stable free radicals)

IT 9003-53-6P, Polystyrene 39307-76-1P, Sodium styrenesulfonate-styrene copolymer 105935-35-1P, Butadiene-methyl methacrylate-styrene block copolymer 106399-43-3P, Butadiene-methyl methacrylate block copolymer 106911-77-7P, Methyl methacrylate-styrene block copolymer 108561-19-5P, Butyl acrylate-methyl methacrylate-styrene block copolymer 110772-34-4P, Butyl acrylate-styrene block copolymer 119708-91-7P, 2-Ethylhexyl acrylate-styrene block copolymer 121917-49-5P, Ethyl acrylate-methyl methacrylate block copolymer 178034-20-3P, Sodium styrenesulfonate-styrene block copolymer 185510-41-2P, Perfluoroctyl acrylate-styrene block copolymer 254100-02-2P, 2-Hydroxyethyl acrylate-methyl methacrylate-styrene block copolymer 254100-03-3P, Methyl methacrylate-perfluoroctyl acrylate block copolymer 254100-04-4P, Behenyl acrylate-perfluoroctyl acrylate block copolymer 254100-05-5P 254100-06-6P, Methyl methacrylate-octyl acrylate block copolymer

RL: IMF (Industrial manufacture); PREP (Preparation)  
 (emulsion polymerization in the presence of stable free radicals)

IT 188526-94-5  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (emulsion polymerization in the presence of stable free radicals)

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE  
 FOR THIS RECORD. ALL CITATIONS AVAILABLE  
 IN THE RE FORMAT

FULL SEARCH HISTORY

=> d his nofile

(FILE 'HOME' ENTERED AT 09:50:34 ON 12 JUN 2009)

FILE 'HCAPLUS' ENTERED AT 09:50:48 ON 12 JUN 2009  
E US20080050572/PN

L1 2 SEA SPE=ON ABB=ON PLU=ON US20080050572/PN  
D SCA  
SEL RN

FILE 'REGISTRY' ENTERED AT 09:52:33 ON 12 JUN 2009  
L2 32 SEA SPE=ON ABB=ON PLU=ON (762301-15-5/BI OR  
9002-86-2/BI OR 9003-07-0/BI OR 9003-53-6/BI OR  
9003-56-9/BI OR 107-21-1/BI OR 110-63-4/BI OR 135028-55  
-6/BI OR 13598-36-2/BI OR 43190-26-7/BI OR 504-63-2/BI  
OR 629-11-8/BI OR 7429-90-5/BI OR 7439-89-6/BI OR  
7439-95-4/BI OR 7439-96-5/BI OR 7439-98-7/BI OR  
7440-02-0/BI OR 7440-05-3/BI OR 7440-06-4/BI OR  
7440-22-4/BI OR 7440-31-5/BI OR 7440-32-6/BI OR  
7440-33-7/BI OR 7440-47-3/BI OR 7440-48-4/BI OR  
7440-50-8/BI OR 7440-57-5/BI OR 7440-66-6/BI OR  
7440-67-7/BI OR 7440-70-2/BI OR 9002-98-6/BI)  
D SCA

FILE 'STNGUIDE' ENTERED AT 09:54:51 ON 12 JUN 2009

FILE 'REGISTRY' ENTERED AT 10:02:03 ON 12 JUN 2009  
L3 2 SEA SPE=ON ABB=ON PLU=ON L2 AND 3/NC  
D SCA  
D

L4 81856 SEA SPE=ON ABB=ON PLU=ON 80-62-6/CRN  
L5 53869 SEA SPE=ON ABB=ON PLU=ON 79-41-4/CRN  
L6 52656 SEA SPE=ON ABB=ON PLU=ON 141-32-2/CRN  
L7 27707 SEA SPE=ON ABB=ON PLU=ON (L4 OR L5) AND L6  
L8 6751 SEA SPE=ON ABB=ON PLU=ON L4 AND L5 AND L6

FILE 'LREGISTRY' ENTERED AT 10:05:42 ON 12 JUN 2009  
L9 STR  
L10 STR L9

FILE 'REGISTRY' ENTERED AT 10:08:17 ON 12 JUN 2009  
L11 50 SEA SSS SAM L9 AND L10  
L12 SCR 2043  
L13 50 SEA SSS SAM L9 AND L10 AND L12

FILE 'STNGUIDE' ENTERED AT 10:09:20 ON 12 JUN 2009

FILE 'REGISTRY' ENTERED AT 10:13:28 ON 12 JUN 2009  
L14 114589 SEA SSS FUL L9 AND L10 AND L12  
SAV TEMP L14 FER808REG/A  
L15 1 SEA SPE=ON ABB=ON PLU=ON L2 AND L14  
D SCA

FILE 'HCAPLUS' ENTERED AT 10:15:30 ON 12 JUN 2009  
L16 5 SEA SPE=ON ABB=ON PLU=ON L15  
D SCA  
L17 2265 SEA SPE=ON ABB=ON PLU=ON L14(L)BLOCK?

FILE 'REGISTRY' ENTERED AT 10:19:04 ON 12 JUN 2009  
L18 2 SEA SPE=ON ABB=ON PLU=ON L2 AND P/ELS  
D SCA  
D SCA L2

FILE 'STNGUIDE' ENTERED AT 10:20:11 ON 12 JUN 2009

10550808-296659-EIC SEARCH

FILE 'LREGISTRY' ENTERED AT 10:22:24 ON 12 JUN 2009  
L19 STR

FILE 'REGISTRY' ENTERED AT 10:33:15 ON 12 JUN 2009  
L20 50 SEA SSS SAM L19  
L21 2 SEA SPE=ON ABB=ON PLU=ON L2 AND C6/ES  
D SCA

FILE 'LREGISTRY' ENTERED AT 10:36:30 ON 12 JUN 2009  
L22 STR

FILE 'REGISTRY' ENTERED AT 10:44:04 ON 12 JUN 2009  
D SCA L18  
D L18 1-2 RN STR

FILE 'LREGISTRY' ENTERED AT 10:44:57 ON 12 JUN 2009

FILE 'REGISTRY' ENTERED AT 10:46:35 ON 12 JUN 2009  
L23 5 SEA SSS SAM L22  
D SCA

FILE 'LREGISTRY' ENTERED AT 10:47:42 ON 12 JUN 2009  
L24 STR L22

FILE 'REGISTRY' ENTERED AT 10:48:06 ON 12 JUN 2009  
L25 5 SEA SSS SAM L24  
L26 63 SEA SSS FUL L24  
L27 1 SEA SPE=ON ABB=ON PLU=ON L2 AND L26  
D SCA

FILE 'HCAPLUS' ENTERED AT 10:50:55 ON 12 JUN 2009  
L28 70 SEA SPE=ON ABB=ON PLU=ON L26  
L29 7 SEA SPE=ON ABB=ON PLU=ON L17 AND L28  
D SCA

FILE 'REGISTRY' ENTERED AT 10:52:20 ON 12 JUN 2009  
E C13H30NO4P/MF  
L30 22 SEA SPE=ON ABB=ON PLU=ON C13H30NO4P/MF  
D SCA

FILE 'STNGUIDE' ENTERED AT 10:54:49 ON 12 JUN 2009

FILE 'REGISTRY' ENTERED AT 10:57:54 ON 12 JUN 2009  
E "PHOSPHONIC ACID, P-[1-((1,1-DIMETHYLETHYL)HYDROXYAMINO)C13 H29 N O 4 P/MF  
L31 4 SEA SPE=ON ABB=ON PLU=ON C13 H29 N O 4 P/MF  
D SCA

FILE 'STNGUIDE' ENTERED AT 11:00:50 ON 12 JUN 2009

FILE 'REGISTRY' ENTERED AT 11:04:15 ON 12 JUN 2009  
E C14H22NO/MF  
L33 144 SEA SPE=ON ABB=ON PLU=ON C14H22NO/MF  
E NITROXIDE/CNS

FILE 'REGISTRY' ENTERED AT 11:07:36 ON 12 JUN 2009  
E "NITROXIDE, 1,1-DIMETHYLETHYL, 2-METHYL-1-PHENYL-PROPYL

L34 8424 SEA SPE=ON ABB=ON PLU=ON ?NITROXIDE?/CNS  
L35 16 SEA SPE=ON ABB=ON PLU=ON L33 AND L34  
D SCA

FILE 'STNGUIDE' ENTERED AT 11:05:27 ON 12 JUN 2009

## 10550808-296659-EIC SEARCH

L36           1 SEA SPE=ON ABB=ON PLU=ON "NITROXIDE, 1,1-DIMETHYLETHYL 2-METHYL-1-PHENYLPROPYL"/CN  
           D SCA

FILE 'HCAPLUS' ENTERED AT 11:08:20 ON 12 JUN 2009  
 L37        222 SEA SPE=ON ABB=ON PLU=ON L32  
 L38        104 SEA SPE=ON ABB=ON PLU=ON L36  
 L39        6 SEA SPE=ON ABB=ON PLU=ON L29 AND (L37 OR L38)  
           D SCA  
 L40        88762 SEA SPE=ON ABB=ON PLU=ON L14  
 L41        6262 SEA SPE=ON ABB=ON PLU=ON L8  
 L42        88762 SEA SPE=ON ABB=ON PLU=ON L40 OR L41  
 L43        13 SEA SPE=ON ABB=ON PLU=ON L42 AND L28  
 L44        9 SEA SPE=ON ABB=ON PLU=ON L43 AND (L37 OR L38)  
 L45        7 SEA SPE=ON ABB=ON PLU=ON L44 AND BLOCK?  
 L46        7 SEA SPE=ON ABB=ON PLU=ON L39 OR L45  
 L47        QUE SPE=ON ABB=ON PLU=ON PY=<2004 NOT P/DT  
 L48        QUE SPE=ON ABB=ON PLU=ON (PY=<2004 OR PRY=<2004 OR  
           AY=<2004 OR MY=<2004 OR REVIEW/DT) AND P/DT  
 L49        4 SEA SPE=ON ABB=ON PLU=ON L46 AND (L47 OR L48)  
           D 1-4 AU

FILE 'REGISTRY' ENTERED AT 11:16:11 ON 12 JUN 2009  
       SAV TEMP L26 FER808REGA/A

FILE 'HCAPLUS' ENTERED AT 11:17:16 ON 12 JUN 2009  
       SAV TEMP L49 FER808HCP/A  
       D QUE STAT L49  
       D L49 1-4 IBIB ED ABS HITSTR HITIND  
       D QUE STAT L49  
 L50        9 SEA SPE=ON ABB=ON PLU=ON L43 AND (L47 OR L48)  
 L51        5 SEA SPE=ON ABB=ON PLU=ON L50 NOT L49  
           D SCA  
           D 1-5 AU  
 L52        5 SEA SPE=ON ABB=ON PLU=ON L51 AND (BLOCK? OR  
           COPOLYM? OR CO(A)POLYM?)  
           D SCA  
 L53        29 SEA SPE=ON ABB=ON PLU=ON L42 AND (L37 OR L38)  
 L54        29 SEA SPE=ON ABB=ON PLU=ON L53 AND (BLOCK? OR  
           COPOLYM? OR CO(A)POLYM?)  
 L55        29 SEA SPE=ON ABB=ON PLU=ON L54 AND ?ACRYL?  
 L56        14 SEA SPE=ON ABB=ON PLU=ON L55 AND (L47 OR L48)  
 L57        8 SEA SPE=ON ABB=ON PLU=ON L56 NOT (L49 OR L52)  
           D 1-8 AU  
           D QUE STAT L52  
           D L52 1-5 IBIB ED ABS HITSTR HITIND  
           D QUE STAT L57  
           D L57 1-8 IBIB ED ABS HITSTR HITIND